PERFORMANCE OUTCOMES BENCHMARKING

CROSS-REFERENCE TO RELATED APPLICATIONS

This patent application claims priority to U.S. Provisional Patent Application No. 60/252,129, filed

5   November 21, 2000, which is hereby incorporated by reference herein in its entirety.

FIELD OF THE INVENTION

The present invention relates generally to creation and

10   management of feedback reports for a benchmarking process and, more particularly, to a technique for acquiring primary data at the source, compiling the data in an analytically meaningful manner for benchmarking, preparing web based reports and maintaining and managing cumulative historical

15   data and reports.

BACKGROUND OF THE INVENTION

Benchmarking which is a comparison of performance outcomes from a process to a norm is a useful tool for

20   measuring quality and developing methods of improving a process.

One example of an area in which benchmarking is particularly useful is in monitoring ambulatory surgery

procedures. Professional organizations have made attempts

to acquire and tabulate ambulatory surgical procedures

outcomes data for benchmarking. These attempts have

suffered three deficiencies. First the data is typically

5   taken from secondary sources such as billings or claims

records and not from the patient. Second, uniform criteria

are not applied in obtaining the data collection. Third,

data is typically compiled and distributed in a hard copy

form and cannot be accessed in a convenient internet

10   dispersed form.

SUMMARY OF THE INVENTION

In view of the foregoing it would be desirable to

provide a technique for collecting, evaluating and reporting

outcomes data for the purposes of benchmarking which

15   overcomes the above described inadequacies and shortcomings.

More particularly it would be desirable to provide a

technique for collecting outcomes data at a primary level,

evaluating the data in an analytically meaningful manner

reporting the outcome data and maintaining historical data

20   for generation of future comparisons in an efficient and

cost effective manner. It is particularly desirable that

such a system be computer based and use a network such as

the internet both for transporting input data and

disseminating reports.

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According to the present invention, a technique for performance outcomes benchmarking is provided. In one exemplary embodiment, the technique is realized by a method for outcomes monitoring comprising the steps of: collecting

5 at least two outcomes data sets; converting the at least two outcomes data sets into an at least one outcomes result; establishing a norm for an outcomes data group, the outcomes data group comprising a plurality of the at least two outcomes data sets; comparing a selected one of the at

10 least one outcomes result to the norm; and generating at least one outcomes monitoring report comprising the selected one of the at least one outcomes result and the norm.

In accordance with other aspects of this exemplary embodiment, the method may further include: transmitting

15 the at least two outcomes data sets to a data processor; selectively restricting access to the outcomes monitoring report; posting the outcomes monitoring report to a webpage or selectively restricting access to the webpage or a combination thereof.

20 In accordance with other aspects of this exemplary embodiment, the outcomes data sets may be collected from at least one user entity at a plurality of discrete intervals and the outcomes report may be prepared from the outcomes

data collected at least two of the plurality of discrete intervals.

In accordance with further aspects of this exemplary embodiment, the outcomes data sets may be collected from a
5 plurality of user entities; outcomes data sets for each user entity of the plurality of user entities individually identified and converted. The outcomes data sets from the plurality of user entities may comprise the outcomes data group.

10 In accordance with further aspects of this exemplary embodiment the outcomes monitoring report includes at least one outcomes result for a selected user entity of the plurality of user entities and at least one comparison of the norm to the selected one of the at least one outcomes
15 result for the selected user entity.

In accordance with additional aspects of this exemplary embodiment, the embodiment includes a computer signal embodied in a carrier wave readable by a computing system and encoding a computer program of instructions for
20 executing a computer process performing the method for outcomes monitoring described herein.

In another exemplary embodiment a technique for monitoring surgical procedure outcomes is provided. In one exemplary embodiment the technique is realized by a method

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for outcomes monitoring of surgical procedures comprising

the steps of: collecting at least two primary source

surgical outcomes data sets; converting the at least two

primary source surgical outcomes data sets into at least one

5   outcomes result; establishing a norm for an outcomes data

group, the outcomes data group comprising a plurality of the

at least two outcomes data sets, comparing a selected one of

the at least one outcomes result to the norm; and generating

at least one outcomes monitoring report comprising the

10   selected one of the at least one outcomes result and the

norm.

In accordance with other aspects of this exemplary

embodiment the method may further include: transmitting the

at least two primary source surgical outcomes data sets to a

15   data processor; selectively restricting access to the

outcomes monitoring report; posting the outcomes monitoring

report to a webpage; and selectively restricting access to

the webpage.

In accordance with other aspects of this exemplary

20   embodiment the method may further include collecting the at

least two primary source surgical outcomes data sets from a

plurality of surgical centers; and individually identifying

and converting the at least two primary source outcomes data

sets for each surgical center of the plurality of surgical

centers where the outcomes data sets from the plurality of

surgical centers comprises the outcomes data group.

In accordance with other aspects of this exemplary

embodiment the method may further include an outcomes

5   monitoring report which has at least one outcomes result for

a selected surgical center of the plurality of surgical

centers and at least one comparison of the norm to the

selected one of the at least one outcomes result for the

selected surgical center.

10   In accordance with further aspects of this exemplary

embodiment, the embodiment may include a computer signal

embodied in a carrier wave readable by a computing system

and encoding a computer program of instructions for

executing a computer process performing the method for

15   outcomes monitoring of surgical procedures described herein.

In another exemplary embodiment an apparatus for

outcomes monitoring is provided. The apparatus comprises: a

data collection portion wherein the data collection portion

collects at least two outcomes data sets; a data processor

20   portion wherein the data processor portion receives the at

least two outcomes data sets from the data collection

portion and wherein the data processor comprises: a

converter portion wherein the converter portion converts the

at least two outcomes data sets into an at least one

outcomes result; a norm establishing portion wherein the

norm establishing portion establishes a norm for an outcomes

data group, the outcomes data group comprising a plurality

of the at least two outcomes data sets, a comparison portion

5   wherein the comparison portion compares a selected one of

the at least one outcomes result to the norm; and a report

generation portion wherein the report generation portion

generates at least one outcomes monitoring report comprising

the selected one of the at least one outcomes result and the

10 norm.

In accordance with further aspects of this exemplary

embodiment, the apparatus for outcomes monitoring may

further comprise a webpage portion wherein the at least one

outcomes monetary report is posted to a webpage; or a

15 security portion, the security portion selectively

restricting access to the at least two outcomes data sets,

the at least one outcomes result and the at least one

outcomes monitoring report; or both.

In accordance with other aspects of this exemplary

20 embodiment, the apparatus for outcomes monitoring may be an

apparatus wherein the at least two outcomes data sets are

surgical procedures outcomes data sets, or wherein the at

least two surgical procedures outcomes data sets are primary

source data sets or both.

The present invention will now be described in more detail with reference to exemplary embodiments thereof as shown in the appended drawings. While the present invention is described below with reference to preferred embodiments,

5   it should be understood that the present invention is not limited thereto. Those of ordinary skill in the art having access to the teachings herein will recognize additional implementations, modifications, and embodiments, as well as other fields of use, which are within the scope of the

10 present invention as disclosed and claimed herein, and with respect to which the present invention could be of significant utility.

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BRIEF DESCRIPTION OF THE DRAWINGS

15 In order to facilitate a fuller understanding of the present invention, reference is now made to the appended drawings. These drawings should not be construed as limiting the present invention, but are intended to be exemplary only.

20 Figure 1 is a schematic diagram of the system of the invention in accordance with the present invention;

Figure 2 is a diagram showing the steps of using the invention in accordance with one embodiment of the present invention;

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Figure 12 shows an example of parameters of an

indicators description string in accordance with an

embodiment of the invention;

Figure 13 shows an example of an indicator description

5   report page in accordance with one embodiment of the

invention;

Figure 14 shows an example of parameters of a

comparison table file in accordance with one embodiment of

the invention;

10   Figure 15 shows a report of the type showing data for a

user and cumulative data for all user groups used in

establishing a norm in accordance with one embodiment of the

invention;

Figure 16 shows the parameters of a ProcDistrib file in

15   accordance with one embodiment of the invention;

Figure 17 shows a case distribution table in accordance

with one embodiment of the invention;

Figure 18 shows an exemplary first stage list file in

accordance with one embodiment of the invention;

20   Figure 19 shows an exemplary second stage list file in

accordance with one embodiment of the invention;

Figure 20 shows an exemplary report folder structure

for a private web site in accordance with one embodiment of

the invention;

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Figure 21 is an exemplary menu for accessing previous reports in accordance with one embodiment of the invention;

Figure 22 is an exemplary graphic report in accordance with one embodiment of the invention; and

5   Figure 23 in an exemplary graphic report in accordance with one embodiment of the invention.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

The outcomes monitoring system (OMS) of the invention
10   (also referred to herein as the System) is described in the context of collecting and reporting outcomes data for benchmarking ambulatory surgical procedures which may be used for benchmarking both a given center's performance for a particular procedure(s) against historical data for that
15   surgery center or for benchmarking the performance of a particular center with respect to the performance of a group of centers. As used herein a center is a user unit entity such as a clinic, or a business for example. The term "user" includes both the user entities as well as the human
20   beings using the system. As one skilled in the art will appreciate this is one example of the usefulness of the invention. The invention may be applied in other areas of healthcare, such as, the benchmarking of hospital, nursing

home, student health center or abortion clinic procedures,

for example.

   Further the invention may be generally applicable to

benchmarking performance in such areas as sales force

5   performance, customer satisfaction, manufacturing process

performance, service provider performance and the like. As

one of ordinary skill in the art will appreciate the outcome

monitoring system of the invention may be used for

benchmarking performance in these areas and other areas

10   without undue experimentations. Further, the invention

accommodates benchmarking from primary data (e.g.,

information directly acquired from individuals involved in

the process such as patients, health care providers, or

customers and the like or measurements made or data taken as

15   a direct result of the process). For example, or secondary

data such as billing records or claims records, for example,

or a combination thereof. The ability to obtain

benchmarking information from a primary source while

maintaining confidentiality or privacy of specific

20   identifiers for the primary source is a particularly

desirable feature of some embodiments of the invention.

   At this point it should be noted that the system in

accordance with the present invention as described herein

typically involves the processing of input data and the

generation of output data to some extent. This input data

processing and output data generation may be implemented in

hardware or software. For example, specific electronic

components may be employed in a personal computer, server or

5   similar or related circuitry for implementing the functions

associated with acquiring, transmitting, analyzing and

storing data in accordance with the present invention as

described herein. Alternatively, one or more processors

operating in accordance with stored instructions may

10   implement the functions associated the system in accordance

with the present invention as described herein. If such is

the case, it is within the scope of the present invention

that such instructions may be stored on one or more

processor readable media, or transmitted to one or more

15   processors via one or more signals.

Referring to Figure 1, in general the system of the

invention comprises a plurality of user interfaces 500, 520,

540, 560, a network 100 and a server 200. Four user

interfaces are shown in Figure 1 as representative of the

20   plurality of user interfaces that may be associated with the

system. The number of user interfaces may be greater or

less than four. The plurality of user interfaces are

personal computers (PC) equipped with modems and suitable

software in an exemplary embodiment. More particularly

suitable user interfaces 500, 520, 540, 560 may, for

example, include an IBM-PC compatible personal computer

capable to run under Windows-95 (or 98) operating system, a

Pentium processor with clock speed more than 100 MHz, 16

5   MBytes (or higher) of RAM, 1000 MByte (or higher) hard disk

capacity; a dial-up Internet connection with an Internet

service provider; a 28.8 (or higher) kbps telephone modem

for data transfer; (optionally) a lower speed modem for

automated patient interview dialing, which requires a second

10   telephone line; and the database management system such as

FileMaker Pro or Visual Basic.

Additionally, the user interfaces 500, 520, 540, 560

will have performance outcomes benchmarking software as

described herein. Further, it is desirable that the user

15   interfaces 500, 520, 540, 560 have a means for archiving

data such as a floppy disk or CD or the like or be linked to

a suitable memory device for archiving data obtained at the

user site.

The user interfaces 500, 520, 540, 560 are used for

20   collecting data and inputting data into the system and

accessing reports generated by the system. Further, as

illustrated in Figure 1 the user interfaces 500, 520, 540,

560 are not directly interconnected. This is preferable in

embodiments where highly confidential information is

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involved such as when the users are competitors or when

personal confidential information such as patient identity

is involved, for example. In such cases, it is important to

restrict access of a particular user to that user's data and

5   results, and that user's results as compared to compiled

benchmarking norms for all users.

As Figure 1 shows the user interfaces 500, 520, 540,

560 are connected to a network 100. The network 100 is used

to transmit data collected and input by the users to the

10   server and disseminate the analyzed data and reports to the

user. In an exemplary embodiment, the network 100 is a

general access network such as the Internet, for example.

Confidentiality of information transmitted over the network

100 may be maintained by the use of such known means as

15   password protection and encryption, for example. In

preferred embodiments reports are posted to a password

protected web page or the like.

The server 200 processes the collected data transmitted

via the network 100, prepares reports and archives data and

20   reports. The algorithms of this invention typically reside

in the server 200. The algorithms are applied to analyze

the collected data which in turn yields results suitable for

comparisons of performance. The comparisons may be internal

to a particular user such as comparison of the performance

of one month to the performance of another month, for

example, or may compare the user's performance for a

specified period to a norm based on an average for a group

of users. The results may be considered to be statistically

5   significant if based on a data group (as used herein a data

group is a plurality of discrete data sets)of a suitable

size. Typically, at least 30 data points are used for

calculating statistically significant results. Reports

reflecting the results of the data analysis are generated in

10   the server 200. In an exemplary embodiment results are

stored in tables such that reports customized in content and

form may be generated in a facile manner. The collected

data, analyzed results and reports or a combination thereof

are also archived in the server 200 or alternatively in a

15   memory device associated with the server. Hence not only

may previous reports be accessed, but also collected data

and analyzed results are available for use in generating

future reports. For example it is frequently desirable to

compare existing data with new data as it becomes available.

20   In an exemplary embodiment, the server used to operate

an Outcomes Monitoring System may be a Hewlett Packard

NetServer LH 3. The HP Server contains 5 hard drives which

are used for the storage of data and the programs required

for operation. In conjunction with the HP Server, a Cisco

1720 Router is used to provide the Internet connection.

Internet service with a connection speed of 512K is used in

this exemplary embodiment. This server is described for

illustrative purposes and is one of many servers suitable

5   for use in the outcomes monitoring system of this invention.

Referring to Figure 2, use of the invention in an

embodiment directed to outcomes monitoring of ambulatory

surgical procedures, is summarized. As one skilled in the

art will recognize this is one of many possible embodiments

10   related to health care outcomes monitoring. Further, other

embodiments of the invention may be applied in many other

types of outcomes monitoring of processes including, for

example, service performance, sales force performance,

service provider performance, manufacturing performance and

15   the like, for example. For convenience, use of the

invention is described in terms of outcomes monitoring of

ambulatory surgical procedures with the understanding that

the fundamental steps of use of the invention are comparable

in other embodiments.

20   As shown in Figure 2, the steps of using an exemplary

embodiment of the invention directed to outcomes monitoring

of ambulatory surgical procedures include: collection of

patient, procedure and outcomes data S200, input of

collected data S300, transmission of data to the system

server S400, compilation and analysis of data by system

server algorithms S500, preparation of outcomes monitoring

(benchmarking) reports by the system server S600, posting of

the outcomes monitoring reports to a web page S700, and user

5   review of reports via internet connection to the web page

S800.   The steps for use of the exemplary embodiment are

discussed in further detail below.

Referring to Figure 2, step S200 comprises collection

of patient, procedure and outcomes data (herein collectively

10   referred to as outcomes data set(s).   In a preferred

embodiment, the data is collected directly from the patient,

center staff or both at a time coinciding with the

procedure, within a predetermined proximity to the procedure

or both.

15   To maintain patient privacy and confidentiality,

patient identification codes may be assigned. A system of

patient identification (ID) codes, unique for each episode

of care, may be established at each center.   In order to

maintain complete patient confidentiality, it is preferable

20   that centers not use social security numbers for ID codes.

A surgical center may assign a patient a facility specific

ID number, with no relation to any personal identification

numbers or names. Alternatively, the ID "number" may be

derived from another numbering system used by the facility,

such as patient account numbers, etc. so long as numbers are

not repeated for patients with multiple episodes of care.

To protect privacy and confidentiality it is preferable that

patient names and medical record numbers are not provided to

5 the server. Maintaining records of specific patient

information associated with data entries at a center or

local user level is important to the center's ability to

address issues identified in the reports of the OMS and

apply benchmarking results to improve performance.

10 Potential OMS participants in the exemplary embodiment

are all patients scheduled for an applicable procedure.

Participants as used herein are primary data sources.

Criteria may be established to identify a suitable primary

data source. For example patients in an exemplary

15 embodiment for ambulatory surgical procedure monitoring are

typically excluded if

- they undergo two unrelated procedures

  simultaneously (example: patient having a

  cataract removal and hernia repair at the same

20 time);

- the patient is scheduled for a planned inpatient

  admission postoperatively; or

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- none of the procedure codes on the patient's record matches any of the codes included in the identified procedure codes to be benchmarked.

5   In an exemplary embodiment, centers are strongly encouraged to submit data on as many patients as possible, (20 percent of specified population(s) is suggested) but there are no minimum requirements for data submission. Depending upon the size of the center and the volume of

10   procedures performed, a center may determine its own standards for quantity of data collected. It should be kept in mind, however, that larger databases provide more meaningful information. A minimum of 30 points are desirable for statistically significant evaluation.

15   However, lesser numbers may be useful for identifying quality issues.

       Further the system permits benchmarking of a wide range of types of data. Hence many kinds a data may be collected and considerably flexibility is afforded in outcomes that

20   may be monitored and benchmarked. However, for benchmarking a particular outcome it is important to use uniform criteria when collecting data related to that outcome.

       In an embodiment for monitoring health care outcome stripping all personal identifiers from the data transmitted

to the server is desirable. It may further be desirable to inform patients that:

1. no identifiable medical or personal information will leave the Local Center;

5 2. that server staff will have no personal identifiers;

3. that only grouped information will be reported back to the center;

4. that participation will not affect the care they

10 receive; and the like.

Additionally, in some cases it may be desirable to obtain informed consent from patient.

Referring again to Figure 2, step S300 is data input. The data collected will typically be collected as a data set

15 for a particular process such as a surgical procedure, for example. Typically, a data set will include a plurality of responses to a set of indicators. Indicators may be verbal responses; measured analytical data such as times, weights, ages, dosage of medicine and the like, or observations of a

20 third-party observer, for example. Any indicator reflective of the outcome of the process being monitored may be used. Although one indicator may be used, typically a set of indicators will be used. It may be desirable in some embodiments to validate benchmarking indicators utilizing

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statistical methods known to those of ordinary skill in the art.

The indicators (indicators as used herein are the specific information gathered)may be defined for any process

5   or procedure to be benchmarked. Such indicators may be customized to the procedure or process to be benchmarked.

The specific data collected for comparison purpose should be collected in a standardized manner with specified collection criteria. However, the system provides extensive

10 flexibility in selection of data to be collected. This allows the system to be applied to a range of needs and benching marking of many types of procedures. Further data collection may include questions which are intended for site specific benchmarking in addition to questions which are

15 intended for broader based comparisons. Additionally, questions for general reference such as marketing studies, scientific research studies and the like, may be included and archived for reference, but not utilized in the process of evaluating data and preparing benchmarking reports.

20 The data collection process may take many forms. The following example is illustrative of the type of information that may be collected and a procedure that may be followed which utilizes standardized criteria. As one skilled in the art will recognize, this is one of many suitable data

collection protocols which may be used in the practice of the invention.

Data collection in an Outcomes Monitoring System for Ambulatory Surgical Centers in one embodiment may begin by
5 opening a Medical Record Abstract Form. The form may include input fields such as:

- Add A New Record

- Patient ID

- Procedure Date

10 - Payor

- Procedure Information (predefined procedure category, codes facilitate standardization)

- Start and end time of the Procedures

- Recovery Sites

15 - Discharge Time

- Time at which Patient Met Discharge Criteria

- Type of Anesthesia (Codes facilitate standardization)

- MD Present during anesthesia (yes or no)

20 - Patient Disposition following surgery

- Any of a predetermined list of identified problems experienced (problems are defined as well as

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criteria for assessing significance of a problem

and response selections provided)

- Postoperative Pain Management (Including yes/no

responses to questions such as:

5   Pain Verbalized?

Med Ordered?

Med Admin?

and Pain Relieved?

- Discharge Pain Management (including yes/no

10   questions such as):

Pain Prescription Given?

Pain Control Methods Explained?:

and Institution Specific Variables

As a general rule, it is desirable for monitoring

15 outcomes of ambulatory surgery procedures that a post-

discharge patient interview take place within 1 - 2 working

days from the date of discharge. In an exemplary embodiment

this may be a phone interview. It is important that

patients be contacted while the events of their care are

20 fresh in their memory. The purpose of the interview is to

collect information about the "outcome" of the procedure

(i.e. checking the patient's condition after discharge), and

to collect information about the patient's perception of

their care (i.e. level of satisfaction with the care
provided).

The data obtained from the patient telephone interview
may be entered in a Patient Telephone Interview form. The
5 form may include such data entry fields as:

Patient ID, date;

Time of the interview, patient responses, who was

interviewed, and time the interview ended;

All interviews should begin with an introduction of the

10 caller including the reason for the call.

In order to obtain data that is reliable it is

important that all interviewers use the same

definitions and questions and responses are recorded

using one of the preselected response choices. Types

15 of sample questions and selected responses include:

1. After leaving the surgery center… These questions

relate to whether- Patients were adequately

prepared for self-care at home after discharge and

apply to all procedure groups. It is important

20 that the answers to each question are recorded as

"yes," "no," or "somewhat." Some patients may

need instructions in this regard.

2. At any time after leaving the center did you have…

These questions relate to Quality - "Patients

experiencing problems after discharge related to

the surgical procedure requiring medical or

surgical care." The "key" words in this indicator

are related to the surgical procedure and

5   requiring medical or surgical care. Problems

patients report that do *not* relate to their

surgical procedure (i.e. a fall after arriving

home; an auto accident on the way home, etc.)

should not be considered in question 2 of the

10   interview. Also, only problems that resulted in

the patient seeking additional medical care may be

considered as "meeting" the indicator. Questions

applicable to specific procedure groups may be

included.

15 3.   After returning home... These questions relate to

whether - Patients expressing pain after discharge

who had relief of pain after utilizing pain

control methods as instructed.

4.   How well would you say your pain was relieved...

20   This question assess the patients' relief of pain.

Patients may be asked to rate their pain on a

scale of 1 to 10, with "1" equaling complete

relief and "10" not relieved at all.

5.   How would you describe the quality of care you

received. . . .   These questions are directed

towards determining whether - patients were

satisfied with pre-operative, intraoperative, and

5   postoperative care.

For an exemplary embodiment for monitoring ambulatory

surgical procedures, outcomes procedures to be monitored and

indicators are preferably determined prior to data

collection.

10   In an embodiment for benchmarking ambulatory surgical

procedures, patient data is typically collected from

patients, patient relatives or surgery center staff or a

combination thereof.

In a preferred embodiment electronic forms and tables

15   may be used to enter and compile patient data.   As discussed

each patient receives a unique ID code, so that data entered

at a center may be transmitted to the server without

personal identifiers.

Data may be entered directly into electronic screens

20   during medical record reviews and telephone interviews.

Alternatively data may be documented as paper records and

entered into the electronic system at a later time.   Data

entry directly from a primary data source into electronic

form is preferred.   Further in a preferred embodiment data

collection forms are based on modifications of instruments

that have been validated.

More particularly, data collection and abstracting may

be completed in one of two ways:

5   1.   Manually: Blank forms are printed and data is

                manually entered onto the forms and entered into

                the computer file at a later time. This method is

                not generally recommended but can be used.

        2.   Directly: Data are entered directly into the

10   computer screen. After a sufficient number of

                records are completed (20 or more, for example),

                the data may be "uploaded" to server through an

                Internet connection.

15   As a center compiles and transmits information, server

staff may conduct both overall and center-specific analyses

of the clinical data. A center is encouraged to archive all

patient data with patient identifiers locally (See S320).

Such local archival enables a center to investigate issues

20 identified by the OMS in depth at a later date, e.g.,

benchmarking identifies trends and follow-up of individual

patients may be necessary to establish reasons for

deviations from expected values. Thus by monitoring patient

specific data at the local level this information which is

useful to the center is maintained while the risk of

improper invasion of patient privacy is minimized.

Because medical information is rightly held by patients

and health care providers to be confidential, effort should

5   be made to assure confidentiality and privacy throughout the

system. Entry into the database associated with data input

may be controlled via passwords for example, and only

personnel directly involved in data entry or supervision

should have access to databases to maintain confidentiality

10   of patient data.

Other measures to restrict access to the information

contained in the OMS may include physical and electronic

barriers to access, restrictions on patient information

maintained at the server and reporting only of group

15   results. In embodiments in which data may be stored on the

server, the server may be password protected at the user

level, and a second password may be required to access the

study database. Further in a preferred embodiment the

personal identifiers are stripped from the data at the local

20   level so that the system data base contains no personal

identifiers.

The data may be collected by a designated individual or

collected by various individuals during the course of the

procedure and follow-up data collection. In some exemplary

embodiments collection by various individuals may be

desirable to facilitate acquiring data in the optimum time

frame with respect to performance of the procedure.

As shown in Figure 2, in step S400, the input data is

5   transmitted to the server. In some exemplary embodiments,

it is desirable to strip the data of any confidential

identifiers prior to transmission. Further in some

embodiments it is preferable to batch data prior to

transmission to the server and use a File Transfer Protocol

10   (FTP) to send data to the server.

In an exemplary embodiment the transmission process may

begin by establishing a network connection to the server and

selecting a software option for transmission, such as an

"upload" icon, for example. An upload screen will then

15   appear, with a series of steps. As each step is

successfully completed, the next step will appear and the

process may be completed by simply following each step in

the program. An exemplary upload screen is shown in Figure

3.

20   In the exemplary embodiment shown in Figure 3, the

second step verifies that the user's Internet connection is

stable and will accommodate a smooth transfer of data. The

user may also be asked for a password during this process.

The third step initiates the actual transfer (or upload) of data from the center to the system server. The user may be asked for a password during this process.

The fourth step in completing data transfer in the

5 exemplary embodiment of Figure 3 is to move all files into the "stock" file. The stock file is the name of the folder where each individual record is stored. This permits later access to individual records or data taken for information only. Such information is typically stored locally (e.g.,

10 the user site) to maintain confidentiality yet provide necessary information for follow-up of issues identified in benchmarking. The "stock file" transfer procedure in one embodiment is the archiving of data locally as shown in step S320 of Figure 2.

15 Again, referring to Figure 3, the upload program may be exited upon confirmation of a successful transfer of data as indicated by the software.

Referring again to Figure 2 in step S500, the system server algorithms compile and analyze input data. Exemplary

20 performance monitoring software is described in detail below. In general, the software has the capacity to convert an outcomes data set to an outcomes result. For example, data for a particular procedure may be selected from data for all procedures; data for a particular indicator for a

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particular procedure accumulated during a specific time

period may be averaged, and the like. Outcomes results may

be derived from direct manipulation of input data (e.g.,

outcomes data set), manipulation of other outcomes results,

5   or any combination thereof.

The performance monitoring software can use multiple

outcomes data sets to establish a norm for an outcomes data

group. For example, in the case of ambulatory surgery

centers, the data from all centers or a selected group of

10   centers may be averaged to determine a norm. Alternatively,

a norm for a single center may be established by averaging

outcomes data sets for that center taken at designated time

intervals, for example.

Benchmarking is achieved by comparing an outcomes

15   result for an indicator or procedure or the like to the norm

for that indicator or procedure. As will be apparent in the

detailed discussion of the exemplary embodiment of the

software of the invention, considerable customization of

specific benchmarking is permitted within the system of the

20   invention.

Referring again to Figure 2, step S600 is the

production of the product of the benchmarking process or the

feedback report(s) to the user (also referred to herein as

outcomes monitoring reports, outcomes reports or reports).

In an Exemplary embodiment reports include benchmarking
in which data collected through the system is analyzed to
reflect compliance with each of a predetermine number of
quality indicators. Although each center has access only to
5   their own data and compliance rates, the reports also may
show "average" compliance rates across all participating
centers. Individual centers can then compare their rate of
compliance against an overall average for a group of centers
for each quality indicator or compare an individual center's
10 compliance to that individual center's compliance for
another period. Password protection may be used to
appropriately restrict access to reports. In one preferred
embodiment, Centers may review their reports at any time by
accessing a password protected web page. Alternatively
15 reports may be transmitted via e-mail or hard copy means.

Exemplary report types for monitoring produce outcomes
for ambulatory surgery procedures may include, for example:

- Cumulative Reports: These reports include an
  accumulation of all data over a specified period
20 of time and will therefore have a large
  volume/database. These reports may be used for
  benchmarking a center's averages with averages for
  all participating centers.

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- Quarterly Reports: These reports include data for the previous quarter. The quarters are per calendar year, with three months in each quarter. First quarter includes January - March data; second quarter includes April - June; third quarter July - September, and fourth quarter October - December, for example. The primary purpose of the Quarterly Reports to track changes from quarter one quarter to the next.

- Current Month Reports: Monthly reports are provided to help identify individual problem cases by including only small portions of data. As a general rule, great care should be taken if using monthly reports for other purposes as the volume of data is often too small to be conclusive of any findings.

- Age Distribution is a report that is helpful when information is needed about age prevalence and/or distribution by procedure. All data submitted for each procedure group have been broken down by age, in approximate 10-year increments, for example. This report also gives the average age for that procedure.

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- _Recovery Time_ shows a breakdown in 30 minute intervals of recovery time for a specific procedure, along with the average recovery time for a center and the average time for all centers.

5
- _Surgery Time_ shows a breakdown in 30 minute intervals of surgery time for a specific procedure, along with the average surgery time for a center and the average time for all centers.

- _Pain, Complications and Patient Satisfaction_ is a
10
table showing totals for all data specific to the quality indicators being monitored.

- _General Indicators_ shows the rate of compliance to each indicator for a center, and the norm for "all" centers participating in the system. The
15
general indicators report provides a view of a center's outcomes, benchmarked with other centers, at a glance.

- _Complications by Payor_ shows a breakdown by payor classification for all complications reported.

20
- _Complications by Anesthesia_ shows a breakdown is by anesthesia type (general, epidural, etc.).

Both newly generated, as well as previous reports, may be accessed by the user.

35

A report will typically have a defined set of

benchmarking indicators. For example indicators in an

exemplary embodiment of a benchmarking report for an

ambulatory surgery performance outcomes monitoring may

5   include:

Perioperative Indicators

      1.   Patients experiencing complications of surgery
            during the perioperative period.
      2.   Patients retained beyond the expected recovery
10   time for the surgical procedure.
      3.   Patients returned to surgery.
      4.   Patients admitted to the hospital following
            surgery.
      5.   Patients expressing pain who did not get relief of
15   pain.

Post-Discharge Indicators

      6.   Patients without significant problems after
            discharge.
20   7.   Patients expressing pain after discharge who had
            relief of pain after utilizing pain control
            methods as instructed.
      8.   Patients satisfied with preoperative,
            intraoperative, and postoperative care.
25   9.   Patients who received and understood discharge
            instructions.
     10.   Patients adequately prepared for self-care at home
            after discharge.

30   Exemplary indicators for an embodiment of the invention for

benchmarking ambulatory surgical procedures are described in

detail in Example 2 below.

Referring to Figure 2, in step S800, the user reviews

reports. The user, as defined herein, includes all

36

individuals or entities that utilize the benchmarking

results. The user may receive a hard copy report or, in

preferred embodiments, access the reports via a restricted

web page. Each report contains specific results from the

5   user's center (user entity) only or comparisons of the user

center's performance to a norm for a group of centers. In

an exemplary embodiment, the user is not allowed access to

specific reports or specific results for other user centers.

In embodiments utilizing a web page to post results, it

10   is preferable that the web page be restricted or protected

such that only an authorized user for a center may access

that center's customized report. This may be accomplished

through use of known means such as passwords and the like.

In embodiments utilizing a web page for disseminating

15   reports, various features may be included such as a brief

definition of each indicator may be shown toward the middle

of the report. Further, in an embodiment in which the

report is retrieved from a web page, the user may click on

the abbreviated wording for a full description of the

20   individual indicator.

User utilization of the reports may, in an exemplary

embodiment for ambulatory surgery centers, include the

following:

The user may begin by assessing the volume of cases by procedure. As a general rule, at least 30 cases or more are needed before any reports can be considered as statistically significant.

5   If, for example, data on 866 knee arthroscopies were submitted for a Surgical Center from 5/17/97 - 5/31/99, this is a considerable volume for this procedure and therefore, the interpretation of reports will have statistical significance. However, if only five (5) cases were

10   submitted for a quarter and one (1) case has complication, the rate of complications will be reflected as 20 percent. As a center continues to report more cases, this percentage may fall considerably. Thus, results based on low volumes may be useful but more antidotal in nature and should not be

15   considered to be statistically significant.

Users have a selection of reports to choose from. In order to make it easier to go from one report to another when viewing the reports from the web page, "links" may be provided to other the benchmarking reports. These links

20   allow the user (when in the on-line mode) to quickly switch from procedure to procedure or from report type to report type. For example, a user can get a quick look at "Surgery Time" for each of their procedures with one click or can

also assess all indicators for a given procedure by simply

clicking on a link provided on the web page, for example.

An exemplary Quarterly Report showing a comparison of

two data sets is provided in Figure 4. Referring to Figure

5   4, the circles reflect a comparison of a center's average to

that of the average for all centers. A black circle

indicates a center's compliance was "worse than average," a

circle with a dot in the middle indicates a center's

compliance was within the "average" for all centers, and a

10 white circle indicates compliance rate was "better than the

average" reported for all centers.

The arrows reflect changes in compliance rates from the

previous quarter (example: fourth quarter rates are compared

to third quarter rates, etc.). An arrow pointing downward

15 indicates that the rate this quarter was "worse" than last

quarter; arrows going in a straight line indicate no change

from last quarter, and arrows pointing upwards indicate the

rate has improved from the previous quarter.

Alternatively, data may be shown in bar graph form

20 including graphic indication of tolerance or statistical

variability, or the like. Figures 22 and 23 are exemplary

of graphic forms of reports.

SOFTWARE OF THE INVENTION

The software of the invention includes software developed for the purpose of analyzing collected outcomes data and preparing reports (collectively the Report System).

5   Among the many features of the Report System software are algorithms that combine data; establish norms; compare data groups; compare data groups to norms; optionally supply statistical data; generate reports from data that is discreetly stored such that various data can be combined to

10   generate a highly customized report in a facile manner; and archive data, combined data and reports both for referral and comparison with data acquired at a later date. The functions of the software are organized in modules. In an exemplary embodiment the modules may include a data-

15   calculation module, data table creator module, chart generator module, comparison table module and report generator module for example. These modules are directed to the tasks of mathematically manipulating data, creating data tables, preparing charts, preparing data comparisons and

20   generating reports, respectively. Each of these modules may have submodules directed to a specific task or type of report. Optionally, additional modules may be included to further address specialized user needs. In the preferred embodiment the reports may be accessed by a user via a

restricted web page such as a password protected web page

for example and the web page may be suitably equipped with

links such that additional reports, other comparisons,

explanatory information and the like may be accessed by a

5   simple click, for example.

A flow chart for the structure of one exemplary

embodiment of a report system 1000 of the invention is

provided in Figure 5.

As Figure 5 shows, the structure is subdivided into

10   folders. The folders include among others a database folder

1100, a configuration files folder 1200, a folder for

storage of log files 1300, a list folder 1400 containing

files related to mathematical calculations and layout of

reports, a first templates folder 1500 which stores ready-

15   to-use configuration files for different types of reports, a

programs folder 1600 containing all modules of the report

system and a second template folder 1700 with files for

generating specific report features. We note that exemplary

file contents for files of an exemplary embodiment of the

20   invention for monitoring outcomes for ambulatory surgical

procedures is provided in Example 1.

As one skilled in the art will recognize the exact

composition and number of folder and files may vary

considerably within the scope of the invention as the

invention is applied to a specific industry or service or as

a user group within an industry desires customization.

However, the mathematical algorithms used and the general

scheme for preparing reports are applicable to the various

5   embodiments of the invention including embodiments for

benchmarking performance outcomes in ambulatory surgery,

performance outcomes for other medical procedures, service

performance outcomes, sales force performance outcomes,

manufacturing performance outcomes and the like.

10   The report system will be described in further detail

for one embodiment of the invention for monitoring

performance outcomes of ambulatory surgical procedure

centers.

Referring to Figure 5, a first folder is the database

15   folder 1100. This is the main database for the report

system. In the exemplary embodiment there are two tables

inside this file: MEDREC and PATINT2. MEDREC, contains all

medical records and PATINT2 contains all patient interview

records. This file is used by the Data_Calculator module

20   (see the description of this module below).

Optionally the folder may also include an archive

folder or backup folder or both to store incremental files.

A second folder is the configuration files folder

([INI] folder) 1200. This folder contains the configuration

files. These configuration files are designated for an end

user and they allow the user to define "what reports will be

generated". The files in the exemplary INI folder include

Report.ini. This file is used to define the periods to

5   generate reports for. The format of the file may be the

following: Name_of_Parameter=Value, for example.

Comments can also be used by typing a ";" character in

the beginning of the comment line. Everything after the ";"

character may be ignored by the report system performing

10   calculations and analyzing data in the exemplary embodiment.

Almost all modules of report system use this file of the

type.

An example of the parameters of this exemplary report

file may be found in Figure 6.

15   Other configuration files may also be included. For

example a file (Info file) may be included to provide paths

to the different components of the report system. The info

file may be used by all modules. An example format of the

Info file is: Name_of_Parameter=Value. Exemplary Parameters

20   for an Info file are shown in Figure 7.

Referring to Figure 5, a third folder is the Log folder

1300. This folder is used to store log files that are

generated by different modules of report system. Files in

this folder may include, for example, an

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Executive_Table.file which is generated by Executive_Table

module of the report system; an

Executive_Table_Paper_Reports, which is generated by

Executive_Table_Paper_Reports module of the report system; a

5   DataTable.file, which is generated by DataTable module of

the report system; a Data_Calculator.file, which is

generated by Data_Calculator module of the report system; a

GrabFile.file, which is generated by GrabFile module of the

report system; a ProcDistrib.file, which is generated by

10   ProcDistrib module of the report system; a report.file,

which is generated by report module of the report system;

and a Comparison_Table.file, which is generated by

Comparison_Table module of the report system.

Referring to Figure 5 a fourth folder is a list folder

15   1400. This folder contains configuration files like the

[INI] folder does. But unlike the [INI] folder, almost all of

these files are responsible either for mathematical

calculations or for the layout of the reports. Most of

these files are a list of strings that have the same

20   structure. Usually each string consists of several fields

and the fields are separated by "*" character.

Files in the list folder may include for example an

Executive_Table list file, which is used by Executive_Table

module. This list file contains a list of indicators that

44

will be shown in a preferred embodiment of a report. The

format of each string may be the following:

Indicator_Name*Numerator*Denominator*Description*MinOrMax*Li

nk

5   Exemplary Executive_table contents are shown in Figure

8.

         An example of parameters associated with this list file

is shown in Figure 4.

         Another list file may be a DataTableItems list file.

10   The DataTableItems list file is used by DataTable_Creator

module. The DataTable_Creator module generates "Data

Tables" file ("DataTable.html"). DataTableItems file may

consist of several sections. Each section corresponds to a

separate table in "DataTable.html" file. Strings that are

15   located inside each section are used to customize the rows

in tables. Each section may begin with one of the following

strings:

         ---Name_of_Table*Total_by_Proc_Flag or

         Name_from_Dump_DB*Row_Name

20   Figures 9 and 10 show examples of the data table items

file parameters and associated data tables, respectively.

         Another list file may be an Indicators file which is

used by the Chart_Generator module. The Indicators file

consists of several sections. Each section corresponds to a

separate report An exemplary version of Chart_Generator

module includes the reports: "Age Distribution," "Recovery

Time," "Surgery Time," "General Indicators," "Complications

by Payor," "Complication by Anesthesia" for example.   Each

5   section may begin with the following string:

With_Tolerance*Without_Tolerance*Chart_Header*Chart_Footer

Example parameters for general report sections are

shown in Figure 11.

10   Indicators for each section are described after the

section header.   An example format of indicator description

string is the following:

Indicator_Name*Numerator*Denominator*AxesLabels

Figures 12 and 13 show examples of an indicator

15   description string and report page, respectively.

Another list file may be a LogMessages list file which

defines different log messages.   Most system modules may use

this file.   The format of each string may be the following:

Message_Name=Text_of_Message

20   where Message_Name is a name of message (report system

modules use this name to refer to log messages) and

Text_of_Message is a message text.   Usually a message text

is much longer than Message_Name, so the main purpose of

LogMessages list file is to eliminate extra text and also

this list file allows similarity of log messages throughout

all modules.

Another list file may be a Comparison_table list file

which is used by the Comparison_table module. It is divided

5   into several sections. Each section begins with a header

and represents a separate group of indicators in "Comparison

Table". (This may be used with paper reports, for example).

The format of the header is:

---Header_of_indicator_group*

10   wherein Header_of_indicator_group contains a text that will

be used as a header of the indicator group. If

Header_of_indicator_group is empty then no header is used

and all indicators in this group have a bold font, for

example.

15   Each section is followed by indicator definitions. The

format of these definitions may be the following:

Numerator*Denominator*Descipting_Text*

An example of the parameters of a Comparison table file

is found in Figure 14.

20   A Corporate_Members list file may be included also. In

an exemplary embodiment, this file describes corporate

members or unit entities using the benchmarking system.

Each unit entity is represented by a separate section. All

sections may have a header. The format of headers may be:

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---GroupName*GroupUsername*GroupUserCode*members_access

where GroupName may be a name of the unit entity;

GroupUsername may be a username of the group (this username

may be used to access reports); GroupUserCode may be a

5   usercode of the group(a three letter code may be convenient

in some embodiments); members_access ("Yes" or "No") may be

used to restrict the access of separate members (in

individual users) to the reports. members_access may be used

by "New_Center_Prepare" module to customize Apache

10   ".htaccess" files for example. Separate members (individual

users) of the user entity can access their reports if

members_access="Yes" otherwise only GroupUsername can be

used to access the reports.

The header of the section may be followed by a list of

15   usercodes of centers that belong to the group.   The

usercodes may be separated by "Enter" key.

An example of a report of the type which may be

presented to a user showing only data for that user and

cumulative data for all user groups included in establishing

20   the norm is shown in Figure 15.   Thus, access to a unit

entity's individual results may be restricted to that unit

entity.

Another file may be a ProcConv list file. This file is

used by Appender and Data_Calculator. This file defines a

mapping table between the CPT codes and the procedure

groups. When Appender module appends new data it ignores

the "PROC" fields in incremental files and uses this

mapping, in the same way Data_Calculator ignores the

5   existing "PROC" field in the report master database and

recreates this field using the mapping. All strings in

ProcConv.lst file may have the same format such as:

                    .   CPT_Code* Procedure_Group

where CPT_Code is a five digit CPT code (procedure code) and

10   Procedure_Group is the name of the corresponding procedure

group.

      Another list file may be a ProcDistrib file which is

used by ProcDistrib module. It defines what fields from

"*_dump.mdb" databases should be displayed in the "Case

15   Distribution" table. The format of the file may be the

following:

                    Field_Name*Descripting_Text*

      Examples of the file parameter information of a

ProcDistrib and a case distribution table are found in

20   Figures 16 and 17, respectively. Note that in the example

shown in Figure 17 only two strings are shown TotMR*Medical

Records* and TotPI*Patient Interview* this list can be

easily expanded.

Another list file may be Sites list file or its

equivalent which contains information about centers – it

describes relationship between usercodes, real names and

usernames. The format of this file may be:

5   Three_Letter_USERCODE*real_Name_of_center*Centers_Username

where Three_Letter_USERCODE is the usercode of the center;

real_Name_of_center is the real name of the center and

Centers_Username is the username. Note that string ALL*All

centers* MUST be first in some embodiments as this string

10   defines usercode for all centers.

Another list file of the exemplary embodiment is a

first Stage list file, (Stage1.lst) which is used by

Data_Calculator module only and describes the mathematical

expressions using the MS SQL language. To get a table that

15   contains procedure level data for a certain period,

Data_Calculator module runs in two stages. On the first

stage, the module uses a first stage list file (Stage1.lst)

to create a "SELECT"-query that combines MEDREC and PATINT2

tables in one table, for example. Instead of the original

20   fields, this table contains new calculated fields that are

used to calculate fields in "*_dump.mdb" files on the next

stage. In this stage, the records are not grouped by

procedure groups and centers usercodes – they are still

patient-level records.

The format of strings of the first stage list file may be the following:

Name_of_Field_1*SQL_Expression

Alternatively a simplified version of "SELECT"-query

5 for use in the first stage may be written in the following way:

SELECT *expression_1* AS *field_1*,...,*expression_k* AS *field_k*,...,*expression_N* AS *field_N* FROM table

10 Name_of_Field is used as *field_k* and SQL_Expression is used as *expression_k*.

A second Stage list file (Stage2.lst), which is also used by the Data_Calculator module, describes mathematical

15 expressions using MS SQL language. This file is used on the second stage of the calculation of MasterTable (later, records from MasterTable are used to populate "*_dump.mdb" files). On this stage MasterTable is calculated. It contains procedure-level data. Only this procedure-level data is used

20 by other modules on next the steps of the report generation process.

The format of strings of this file may be the following:

Name_of_Field_2*Data_Type_of_Field*SQL_Expression*Denominato

25 r*

Exemplary Stage files are shown in Figures 18 and 19.

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Referring to Figure 5, a fifth folder is the first

Templates folder 1500. Files in this folder are not used

directly by the report system. The purpose of the first

templates folder 1500 is to store ready-to-use configuration

5   files for different types of reports. For example, one can

use this folder to store configuration files used to

generate sample reports. As shown, this folder contains two

files only (Sample-Sites.lst and Full_List_Sites.lst) - they

are two versions of Sites.lst file: one is for the usual

10   reports, another for sample reports.

Referring again to Figure 5, a sixth folder is the

Programs folder 1600. This folder contains all report

modules of the report system. As shown, all modules may be

divided into two groups: for "Paper Quarterly Reports" and

15   for "Web Reports". [Paper_Reports] and [Web_Reports]

folders were created according to this breakdown.

The [Paper_Reports] subfolder contains modules that are

used to generate paper reports. For example, for the "Paper

Quarterly Report," HTML files generated by the paper reports

20   modules are created in the folder defined by

"SavePathForPaperReport." An exemplary structure of the

"Paper_Reports" folder is:

```
[PAPER_REPORTS]
+---[Comparison_Table]
25        |    |
```

```
|    +---[Qyyyy-qq]
|    |
|         +---XYZ-FullNameOfXYZ.html
|
+---[Executive_Table]
     |
     +---[Qyyyy-qq]
```

Another exemplary report module is the executive table

(Executive_Table_Paper_Reports.exe). This module generates

"Executive table" for a paper quarterly report. It may

create HTML files for all quarters defined in a report.ini

file.

An example of an executive report is shown in Figure 4.

Another exemplary report module (Comparison_table.exe)

generates the "Comparison table" for the paper quarterly

report. It may create HTML files for all quarters defined

in the "report.ini" file.

A Web_Reports subfolder or its equivalent contains

modules of the report system that generate reports to be

provided to the user through the Internet or network.

A first file APPENDER or its equivalent may appends

incremental files into "Report Master Database" file. It

may use only one configuration file. This module may scan

all centers directories located under upload directory

defined by parameter "UploadDirectory" and append

incremental records from these folder to the master

database. Appended incremental files are moved to the

centers "Backup" folder located under their upload

directories.

A second file Chart_Generator or its equivalent may

5   generate the large part of reports for internet

dissemination. Chart Generator may, for example, create the

following reports in one embodiment:

1.   Age Distribution,
2.   Recovery Time,
10   3.   Surgery Time,
4.   General Indicators,
5.   Complications by Payor,
6.   Complication by Anesthesia.

15   This module may use input files including:

1.   Corporate_Members.lst
2.   Indicators.lst
3.   "*_dump.mdb" files
4.   MasterTable.mdb
20   5.   Sites.lst
6.   LogMessages.lst
7.   all HTML template files from folder, defined by
      "TemplateDirectory" parameter in "new-soix.ini"

Reports may be divided into two types: the reports

25   which contain data for all procedure groups in one page and

those that have separate page for each procedure group.

Report folders for all periods have special sub-folders for

each procedure group (in Fig. 20 these folders are shown as

[Proc_1], [Proc_2], [Proc_k] and [Proc_Z]) and there are the

30   index files (in Fig. 20 these files are referred as

report_index_file_1.html, ..., report_index_file_M.html)

that contain links to this report pages. All these folders

and files are generated by the Chart_Generator. Also, this

module may refresh main-Old.hmtl, the main page of each

5   center (index.html file that are located directly in the

center's folder, not in sub-folders), and index.html files

for all recalculated periods.

If a center has a custom picture that is included in

"Sites.lst" then its main page and main picture will be

10 updated by Chart_Generator.exe.

In one exemplary embodiment the Chart_Generator.exe

module differs from other report modules. When other report

modules are running they update only the report files that

they generate – they do not delete any other report files,

15 so there is no need to rerun other modules later. When the

Chart_Generator module is running, it may delete the whole

report folder for a given period.

Other exemplary report modules include an

Executive_Table.exe module which creates "The Executive

20 Benchmark Table" tables for web page quarter reports. As

input files it uses:

```
1.    Sites.lst
2.    Corporate_Members.lst
3.    Executive_Table.lst
25   4.    LogMessages.lst
5.    "*_dump.mdb" files
```

6.   report.ini
7.   new-soix.ini

As output files, it creates "Executive_Table.html"

5   files for all quarters defined in "report.ini" file. This

module can be easily modified to generate the reports for

other periods, in addition to quarters. An exemplary

executive table report is shown in Figure 4.

Another exemplary report module is the

10   DataTable_Creator module which generates indicator results

tables such as "Pain, Complication & Patient Satisfaction"

tables.

A further exemplary report module may be a

Data_Calculator module as its equivalent. This module

15   calculates procedure-level data for all centers. In some

exemplary embodiments only this module and "APPENDER" have

direct access to the main database, all other modules just

use procedure-level data. This serves to eliminate extra

calculations, for example if the layout of several reports

20   is changed then there is no need to recalculate the data,

one just runs the necessary modules and reports are

refreshed. In most cases it takes much less time then when

the data should be recalculated.

Another report module may be ProcDistrib_Creator or its

25   equivalent. This module creates "Case Distribution" tables.

56

These tables are created for the whole network. They show

case distribution by procedure group and by site inside each

procedure group. The number of medical records and patient

interviews may be present on these tables in an exemplary

5   embodiment.

Referring to Figure 5, a seventh folder in one

exemplary embodiment is a second Template folder 1700. This

folder may contain, for example in an exemplary embodiment,

templates for reports such as the "Age Distribution" report

10   used by "Chart_Generator" module; the "Complication by

Anesthesia" with tolerance zone report which is used by

"Chart_Generator" module; the "Complication by Anesthesia"

without tolerance zone report which is used by

"Chart_Generator" module; the "General Indicators" with

15   tolerance zone report which is used by "Chart_Generator"

module; the "General Indicators" without tolerance zone

report which is used by "Chart_Generator" module; the

"Reports for Previous Periods" which is used by

Chart_Generator module; the loopback file which is shown

20   instead of reports when a center does not have data for

certain period and is used by Chart_Generator,

DataTable_Creator and ProcDistrib_Creator modules; a main-

old file which is used as main page for reports for previous

period and contains links to these reports and used by

Chart_Generator module; a main-Template file which is used

as main index page for "Current Month Reports", "Quarterly

Reports" and "Cumulative reports" by the Chart_Generator

module; a main.html file which is used as center's main

5   page, includes either default SOIX picture or a favorite

picture of the center and is used by Chart_Generator module;

a Payor.html file which is a template for "Complications by

Payor" reports with tolerance limits and is used by

Chart_Generator module; a Payor2.html file which is a

10   template for "Complications by Payor" reports without

tolerance limits and used by Chart_Generator module; a

RecovTime2.html file which is a template for "Recovery Time"

reports and is used by Chart_Generator module; and a

SurgTime2.html file which is a template for " Surgery Time"

15   reports and is used by Chart_Generator module.

A subfolder in the template 1700 folder of an exemplary

embodiment is an All folder. This folder contains files

that are used for reports for the whole network and has the

same application as corresponding templates in the first

20   template folder 1500.

Another exemplary subfolder of the templates 1700

folder is an image folder which stores various images that

are used for reports. The image folder may contain a

centers folder. This folder may be used to store a center's

favorite pictures in a format such as "USERCODE.(jpg or

gif)", where USERCODE is three-letter user code of a center

(For example: aaa.jpg, aza.gif).

In a preferred embodiment a user may access the reports

5   prepared via a web page. This web page may be password

protected to restrict user access or selectively release

specific data to a specified user or both. An exemplary

report folder structure for a private web site is shown in

Figure 20.

10   For this example, folders [center_1], ..., [center_k],

..., [center_Y] are the centers report directories

corresponding to each center. The name of a center's

directory may be a three letter USERCODE of the center for

example: AAA, AAB, MFA. Each center has its own home page,

15   for example [center_k]\index.html file.

Each center's folder has file structure which is

described below for an exemplary embodiment.

Folders [Month], [Quarter] and [MonthCumul] are used to

store "Current Month Report", "Quarterly Reports" and

20   "Cumulative Reports", respectively.

[OLD] folder is used to store "Reports for the Previous

Periods". Each folder inside [OLD] represents reports for a

certain period. Folders for quarterly reports have [Qyyyy-

qq] names, where "yyyy" is a year in four digit format and

59

"qq" is a quarter number with a leading zero (Example:

"Q1999-03" – reports for third quarter of 1999). Files for

previous monthly reports are located in [Myyyy-mm] folders,

and cumulative monthly reports are saved in [Myyyy-mmC]

5   ones, where "yyyy" is a year and "mm" is a month (Example:

"M1999-04" – monthly reports for April 1999, "M1999-03C" –

cumulative monthly reports for March 1999). A file shown in

Figure 20 as main-Old.html provides links to reports for the

previous periods. An example of a menu that permits a user

10   to use this file is shown in Fig. 21.

     Referring again to Figure 20, a folder such as Download

may be used to store center specific files, like

"ftprun.run" or updates and patches for OMS program.

     Other Database files such as (Month_dump.mdb,

15   MonthCumul_dump.mdb and Quarter_dump.mdb) may contain

procedure-level data calculated by the report system. These

files store data for "Current Month Reports", "Cumulative

Reports" and "Quarterly Reports" respectively. In an

exemplary embodiment almost all parts of the report system

20   use these files – not the original Medical Record and

Patient Interview patient-level tables.

     All report pages may be divided into the two groups:

     1)   report pages that show information only for a

           specific procedure group (in current version of

the report system these files include a chart and

a table corresponding to this chart);

2)   report pages that include information for all

procedure groups on one page (in current version

5   of the report system these files include tables

only).

Index files which do not actually include any reports,

may be used to provide access to report pages. Index files

may include the following in an exemplary embodiment, for

10   example: an Index file for "Age Distribution" reports; an

Index file for "Complication by Anesthesia" reports; an

Index file for "General Indicators" reports; an Index file

for "Complications by Payor" reports; an Index file for

"Recovery Time" reports; and an Index file for "Surgery

15   Time" reports.

Combined files are report files for reports where data

for all procedure groups are combined in one file. These

files may contain tables only. Examples of such files may

include "The Executive Benchmark Table" report table or

20   "Data Tables" report tables, for example.

Another file may be included which is used by the

report system to determine the period of reports.

Folders for each procedure group may be included for

preparing reports having separate pages for each procedure

group. The names of these folders in an exemplary

embodiment are derived from the names of corresponding

procedure group by skipping all not alphanumeric characters,

leaving "_" and "-" symbols in unchanged form and changing

5   all spaces to "_" (For example: the folder for procedure

group "D&C/Hysteroscopy" is "DCHysteroscopy", "ENT - T&A <

12" is "ENT_-_TA__12"). Each report in these exemplary

folders is represented by two files: *report_file_k.html* and

report_file_k.gif. The HTML file includes a table and a

10   chart in GIF format (For example: "Age Distribution" for

procedure group " Carpal Tunnel" is represented by the files

"Age_Distribution2.html" and "Age_Distribution2.gif" in the

folder "CarpalTunnel").

In an exemplary embodiment modules may be executed in

15   the following order to create a report: Data_Calculator;

Chart_Generator; Executive_Table; DataTable_Creator; and

ProcDistrib_Creator.

The order of each module should be completed before

moving to the next.

20   Software will also contain suitable provision for

adding and removing user entitles from the benchmarking

system.

EXAMPLE 1

The following is a listing of exemplary files contents

for data analysis and report preparation for one embodiment

of the invention. This example exemplifies one of many

5   groups of files which may be used in ambulatory surgical

procedures monitoring and is provided as an illustrative

example of the many configuration file types and components

which are within the scope of the invention.

Report.ini file

```
10   ;Everything that is located after ";" is comments

     [Run options]
     CalculationDate  =         ;1/30/2000   ;Date that will be used as creation date in
     charts and tables
15                                            ;If there is no date then current date is
     used

     MinNumberOfCases =20               ;Minimal number of cases that allows to
     generate reports for the procedure group
20   Confidence       =1.7             ;Coefficient before sigma to calculate
     tolerable limits

     FoundationDate   =1/1/1999

25   QuarterlyReports =yes        ;Yes or No
     QuarterStart     =1          ;1,2,3 or 4
     QuarterYearStart =2000       ;format is yyyy
     QuarterEnd       =2          ;1,2,3 or 4
     QuarterYearEnd   =2000       ;format is yyyy
30
     MonthlyReports   =yes         ;Yes or No
     MonthStart       =1          ;1 to 12
     MonthYearStart   =2000       ;format is yyyy
     MonthEnd         =6          ;1 to 12
35   MonthYearEnd     =2000       ;format is yyyy

     CumulativeMonthlyReports =yes
     CumulativeMonthStart     =1
     CumulativeYearStart      =2000
40   CumulativeMonthEnd       =6
     CumulativeYearEnd        =2000


     ;-----parameters below this line are not supportes at this moment
45   RunMode          =Auto       ;Auto or Manual

     CleanedDBF       =no         ;Yes or No
```

63

```
StandardReport    =no          ;Yes or No
StartDate         =1/1/1998
EndDate           =12/31/1998
```

5

Executive_Table.lst file

```
ind1*Nummer1*TotMR*Perioperative Compli-<br>cations*min*/genrep/ind1.htm
ind2*Nummer2*TotMR*Delayed in Discharge*min*/genrep/ind2.htm
ind3*Nummer3*TotMR*Returns to Surgery*min*/genrep/ind3.htm
```
10
```
ind4*Nummer4*TotMR*Admits to Hospital*min*/genrep/ind4.htm
ind5*Nummer5*Denom5*Pain Episodes Not Relieved<br>*min*/genrep/ind5.htm

IND6*Nummer6*TotPI*Care Not Needed After<br> Discharge*max*/genrep/ind6.htm
IND7*Nummer7*Denom7*Pain Controlled After<br> Discharge*max*/genrep/ind7.htm
```
15
```
IND8*Nummer8*TotPI*Satisfied Patients*max*/genrep/ind8.htm
IND9*Nummer9*TotPI*Effective Discharge <br>Instructions*max*/genrep/ind9.htm
IND10*Nummer10*TotPI*Patients Prepared for <br>Self-Care*max*/genrep/ind10.htm
```

20   ***DataTableItems.lst*** file

```
---PATIENT DISPOSITION*TotByProc
Patient_Dispos_Normal*Normal
Patient_Dispos_RetainedMore3Hrs*Retained >3 hrs
Patient_Dispos_Hospital*Hospital
```
25
```
Patient_Dispos_Reoperated*Reoperated

---ANESTHESIA*TotByProc
TotEpi*Epidural .
TotGen*General
```
30
```
TotSpi*Spinal
TotMAC*MAC
TotBlock*Block
TotTopical*Topical
TotLoc*Local
```
35
```
TotIVC*IV-CON SED
TotOther*Other
TotNone*None

---PAIN AND COMPLICATIONS*
```
40
```
Pain_Complic_NoPain-NoComplic*No Pain, No<br>Complications
Pain_Complic_Pain*Pain
Pain_Complic_Nausea*Nausea
Pain_Complic_Vomiting*Vomiting
Pain_Complic_InabilityToVoid*Inability To Void
```
45
```
Pain_Complic_Bleeding*Bleeding
Pain_Complic_InstabVitalSigns*Instability Of<br>Vital Signs
Pain_Complic_LevelOfConscChanges*Level Of Conscious-<br>ness
Changes
Pain_Complic_RespirProblems*Respiratory<br>Problems
```

---PAIN CONTROL METHODS*
Pain_Control_Meth_PainContrMethExplOnDischarge*Pain
Control
Methods Explained
on Discharge
5 Pain_Control_Meth_PrescrGivenOnDischarge*Prescription
Given
On Discharge
Pain_Control_Meth_PainVerb*Pain Verbalized
Pain_Control_Meth_MedOrdered*Medication
Ordered
(Who Had
Pain)
10 Pain_Control_Meth_MedAdmin*Medication
Administered
(Who
Had Pain)
Pain_Control_Meth_MedAdminAndRefused*Medication
Administere
d
And Refused
(Who Had Pain)
Pain_Control_Meth_PainRelieved*Pain Relieved
(Who Had Pain)
15

---AFTER LEAVING THE SURGERY CENTER*
After_Leave_Surgery_Problems_Might_Have*Knew What
Problrms
Might Have
After_Leave_Surgery_Who_Call*Knew Who To Call
20 After_Leave_Surgery_Meds_To_Use*Knew What
Medicines to Use
After_Leave_Surgery_Had_Appointment*Had an Appointment
After_Leave_Surgery_Had_All_Info*Had All Information

---POSTOPERATIVE PATIENT INTERVIEW:
COMPLICATIONS THAT
25 REQUIRED MEDICAL INTERVENTION*
Postop_Pat_Int_Complic_AnyProblem*Any Problem
Postop_Pat_Int_Complic_Nausea*Nausea
Postop_Pat_Int_Complic_Vomiting*Vomiting
Postop_Pat_Int_Complic_Fever*Fever
30 Postop_Pat_Int_Complic_ProblemUrine*Problem Urinating
Postop_Pat_Int_Complic_Bleeding*Bleeding
Postop_Pat_Int_Complic_SignsOfInf*Signs Of Infection

---PAIN MANAGEMENT AT HOME*
35 Pain_Manag_Home_PostopPainAtHome*Postop Pain
at Home
Pain_Manag_Home_PostopInstrContrPain*Postop Instructed
to
Control Pain
at Home
Pain_Manag_Home_ComplWithInstr*Complied with
Instructions

40 ---PAIN RELIEF AT HOME FOR PATIENTS WHO HAD PAIN*TotByProc
Pain_Relief_Home_Completely*Completely
Pain_Relief_Home_Greatly*Greatly
Pain_Relief_Home_Somewhat*Somewhat
Pain_Relief_Home_NotRelieved*Not Relieved
45

---PERCEIVED QUALITY IN REGISTRATION AND ADMISSION
PROCESS*TotByProc

Perceived_Quality_Reg_And_Admis_Excellent*Excellent
Perceived_Quality_Reg_And_Admis_Good*Good
Perceived_Quality_Reg_And_Admis_Fair*Fair
Perceived_Quality_Reg_And_Admis_Poor*Poor
5 Perceived_Quality_Reg_And_Admis_N-A*N/A

---PERCEIVED QUALITY AT PREADMISSION TESTING*TotByProc
Perceived_Quality_Preadmis_Excellent*Excellent
Perceived_Quality_Preadmis_Good*Good
10 Perceived_Quality_Preadmis_Fair*Fair
Perceived_Quality_Preadmis_Poor*Poor
Perceived_Quality_Preadmis_N-A*N/A

---PERCEIVED QUALITY IN RECOVERY STAGE IN THE CENTER*TotByProc
15 Perceived_Quality_Rec_Stage_Excellent*Excellent
Perceived_Quality_Rec_Stage_Good*Good
Perceived_Quality_Rec_Stage_Fair*Fair
Perceived_Quality_Rec_Stage_Poor*Poor
Perceived_Quality_Rec_Stage_N-A*N/A
20

Indicators.1st file

;General Indicators
---ind*ind2*General Indicators*%Average% Records:
25 %TotMRAllSites%,· %You%: %TotMRThisSite%. %Average%
Interviews: %TotPIAllSites%, %You%: %TotPIThisSite%.
ind1*Nummer1*TotMR*ind1
ind2*Nummer2*TotMR*ind2
ind3*Nummer3*TotMR*ind3
30 ind4*Nummer4*TotMR*ind4
ind5*Nummer5*Denom5*ind5^^
IND6*Nummer6*TotPI*IND6
IND7*Nummer7*Denom7*IND7^^
IND8*Nummer8*TotPI*IND8
35 IND9*Nummer9*TotPI*IND9
IND10*Nummer10*TotPI*IND10

;ind1 by payor
---payor*payor2*Complications by Payor*%Average% Average
40 Complication Rate: %Ind1AllSites%%. %You%: %Ind1ThisSite%%.
Care_Ind1*Care*TotCare*Medicare
Aid_Ind1*Aid*TotAid*Medicaid
Com_Ind1*Com*TotCom*Non-Capitated
Cap_Ind1*Cap*TotCap*Capitated
45 Uni_Ind1*Uni*TotUni*Uninsured
Wor_Ind1*Wor*TotWor*Workmens Comp

Oth_Ind1*Oth*TotOth*Other

;ind1 by anesthesia
---anest*anest2*Complications by Anesthesia*%Average%
5   Average Complication Rate: %Ind1AllSites%%. %You%:
%Ind1ThisSite%%.
EPI_Ind1*EPI*TotEPI*Epidural
GEN_Ind1*GEN*TotGEN*General
Spi_Ind1*Spi*TotSpi*Spinal
10 MAC_Ind1*MAC*TotMAC*MAC
Block_Ind1*Block*TotBlock*Block
Topical_Ind1*Topical*TotTopical*Topical
Loc_Ind1*Loc*TotLoc*Local
IVC_Ind1*IVC*TotIVC*IV-CON SED
15 Other_Ind1*Other*TotOther*Other
None_Ind1*None*TotNone*None

;Surgery Time
---*surgtime2*Surgery Time*Surgery Time (min)||%Average%
20 average: %Surgtime_AvgAllSites% min. %You%:
%Surgtime_AvgThisSite% min.
SURGTIME-0-30V*SURGTIME-0-30*SURGTIME_TOT*0-29
SURGTIME-30-60V*SURGTIME-30-60*SURGTIME_TOT*30-59
SURGTIME-60-90V*SURGTIME-60-90*SURGTIME_TOT*60-89
25 SURGTIME-90-120V*SURGTIME-90-120*SURGTIME_TOT*90-119
SURGTIME-120-150V*SURGTIME-120-150*SURGTIME_TOT*120-149
SURGTIME-150-180V*SURGTIME-150-180*SURGTIME_TOT*150-179
SURGTIME-180-210V*SURGTIME-180-210*SURGTIME_TOT*180-209
SURGTIME-210-240V*SURGTIME-210-240*SURGTIME_TOT*210-239
30 SURGTIME-240+V*SURGTIME-240+*SURGTIME_TOT*240+

;Recovery Time
---*recovtime2*Recovery Time*Recovery Time (min)||%Average%
average: %Rectime_AvgAllSites% min. %You%:
35 %Rectime_AvgThisSite% min.
RECTIME-0-30V*RECTIME-0-30*RECTIME_TOT*0-29
RECTIME-30-60V*RECTIME-30-60*RECTIME_TOT*30-59
RECTIME-60-90V*RECTIME-60-90*RECTIME_TOT*60-89
RECTIME-90-120V*RECTIME-90-120*RECTIME_TOT*90-119
40 RECTIME-120-150V*RECTIME-120-150*RECTIME_TOT*120-149
RECTIME-150-180V*RECTIME-150-180*RECTIME_TOT*150-179
RECTIME-180-210V*RECTIME-180-210*RECTIME_TOT*180-209
RECTIME-210-240V*RECTIME-210-240*RECTIME_TOT*210-239
RECTIME-240+V*RECTIME-240+*RECTIME_TOT*240+
45

;Age Distribution

```
---*Age_Distribution2*Age Distribution*Age
(years)||%Average% average: %Age_Distrib_AvgAllSites% yrs.
%You%: %Age_Distrib_AvgThisSite% yrs.
Age_Distrib_0-14V*Age_Distrib_0-14*Age_Distrib_Tot*0-14
```
5
```
Age_Distrib_15-24V*Age_Distrib_15-24*Age_Distrib_Tot*15-24
Age_Distrib_25-34V*Age_Distrib_25-34*Age_Distrib_Tot*25-34
Age_Distrib_35-44V*Age_Distrib_35-44*Age_Distrib_Tot*35-44
Age_Distrib_45-54V*Age_Distrib_45-54*Age_Distrib_Tot*45-54
Age_Distrib_55-64V*Age_Distrib_55-64*Age_Distrib_Tot*55-64
```
10
```
Age_Distrib_65-74V*Age_Distrib_65-74*Age_Distrib_Tot*65-74
Age_Distrib_75-84V*Age_Distrib_75-84*Age_Distrib_Tot*75-84
Age_Distrib_85+V*Age_Distrib_85+*Age_Distrib_Tot*85+
```

```
---
```
15

LogMessages.1st file

```
ReportStart            = Report Start
ReportEnd              = Report End
```
20
```
KillTreeMsg            = Tree was overwritten or deleted

KillFileMsg            = File was overwritten or deleted

QuarterReportStart     = Quarter Report is Starting
```
25
```
QuarterReportEnd       = Quarter Report is Completed
MonthReportStart       = Monthly Report is Starting
MonthReportEnd         = Monthly Report is Completed
MonthCumulReportStart  = Cumul Monthly Report is Starting
MonthCumulReportEnd    = Cumul Monthly Report is Completed
```
30
```
StandardReportStart    = Standard Report is Starting
StandardReportEnd      = Standard Report is Completed
```

Comparison_table.1st file

35
```
---*
TotMR*                                      *                        Number of Patients*
---Time (Minutes)*
SurgTime_Avg*                               *                        Time For Procedure*
RecTime_Avg*                                *                        Time For Recovery*
```
40
```
IntTime_Avg*                                *                        Time For Patient Interview*

---Problems Before Leaving Surgery Center*
Patient_Dispos_Normal*                      TotMR*                   Percent Normal Discharge*
Pain_Complic_NoPain-NoComplic*              TotMR*                   Percent without Problems*
```
45
```
Pain_Control_Meth_PainVerb*                 TotMR*                   Percent with Post Operative
Pain*
Pain_Control_Meth_MedOrdered*               Pain_Control_Meth_PainVerb*   &nbsp&nbsp Percent
Medications Ordered*
```
50
```
Pain_Control_Meth_PainRelieved*             Pain_Control_Meth_PainVerb*   &nbsp&nbsp Percent Pain
Relieved*
Pain_Control_Meth_PrescrGivenOnDischarge* TotMR*                      Percent Pain Prescription
Given*
```

Pain_Control_Meth_PainContrMethExplOnDischarge*TotMR*   Percent Pain Control Methods
Explained*

---After Leaving the Surgery Center*
5   After_Leave_Surgery_Problems_Might_Have*   TotPI*   Percent That Knew What
Problems They Might Have*
After_Leave_Surgery_Who_Call*   TotPI*   Percent Knew Who to Call*
After_Leave_Surgery_Meds_To_Use*   TotPI*   Percent Knew Medications to
Control Pain*
10   After_Leave_Surgery_Had_Appointment*   TotPI*   Percent with Post Operative
Appointment*
After_Leave_Surgery_Had_All_Info*   TotPI*   Percent Who Had Self Care
Info*

15   ---Problems at Home*
Postop_Pat_Int_Complic_AnyProblem*   TotPI*   Percent with Problem Related
to Procedure*
Postop_Pat_Int_Complic_Nausea*   TotPI*   Nausea*
Postop_Pat_Int_Complic_Vomiting*   TotPI*   Vomiting*
20   Postop_Pat_Int_Complic_Fever*   TotPI*   Fever*
Postop_Pat_Int_Complic_ProblemUrine*   TotPI*   Difficulty
Urinating*
Postop_Pat_Int_Complic_Bleeding*   TotPI*   Bleeding*
Postop_Pat_Int_Complic_SignsOfInf*   TotPI*   Signs of
25   Infection*
Pain_Manag_Home_PostopPainAtHome*   TotPI*   Percent Bothered by Pain*
Pain_Manag_Home_PostopInstrContrPain*   Pain_Manag_Home_PostopPainAtHome*   Percent with
Instruction about Pain*
Pain_Manag_Home_ComplWithInstr*   Pain_Manag_Home_PostopPainAtHome*   Percent Following
30   Instructions*
Pain_Relief_Home_Completely*   Pain_Manag_Home_PostopPainAtHome*   Percent
Completely Relieved*

---Perceived Quality of Care*
35   Nummer8*   TotPI*   Percent Excellent Quality*
Perceived_Quality_Reg_And_Admis_Excellent*TotPi*   Percent Excellent
Registration and Admission*
Perceived_Quality_Preadmis_Excellent*   TotPI*   Percent Excellent
Preadmission Testing*
40   Perceived_Quality_Rec_Stage_Excellent*   TotPI*   Percent Excellent Recovery
Stage*

ProcConv.lst file

45   29888* Arthroscopic ACL Repair
     67916* Blephroplasty
     67921* Blephroplasty
     19325* Breast augmentation
     19120* Breast Biopsy
50   19318* Breast reduction
     31622* Bronchoscopy
     31625* Bronchoscopy
     28290* Bunionectomy
     28292* Bunionectomy
55   28293* Bunionectomy
     28294* Bunionectomy
     28296* Bunionectomy
     28297* Bunionectomy
     28298* Bunionectomy
60   28299* Bunionectomy
     29848* Carpal Tunnel
     64721* Carpal Tunnel
     66830* Cataract removal
     66840* Cataract removal

```
        66850* Cataract removal
        66852* Cataract removal
        66920* Cataract removal
        66930* Cataract removal
     5  66940* Cataract removal
        66983* Cataract removal
        66984* Cataract removal
        45378* Colonoscopy, diagnostic
        45380* Colonoscopy with biopsy
    10  45384* Colonoscopy with biopsy
        45385* Colonoscopy with biopsy
        52000* Cystoscopy
        52005* Cystoscopy
        52007* Cystoscopy
    15  52204* Cystoscopy
        52281* Cystoscopy
        58120* D&C/Hysteroscopy
        58558* D&C/Hysteroscopy
        43235* EGD
    20  43239* EGD with biopsy
        43248* EGD with dilation
        43249* EGD with dilation
        30520* ENT- Septoplasty
        31255* ENT Sinus endoscopy
    25  42820* ENT- T&A < 12
        42826* ENT- Tonsillectomy > 12
        69436* ENT- Tubes
        69631* ENT- Tympanoplasty
        49320* GYN laparoscopy
    30  58660* GYN laparoscopy
        58670* GYN laparoscopy
        58671* GYN laparoscopy
        49505* Hernia repair
        49585* Hernia repair
    35  29870* Knee Arthroscopy
        29877* Knee Arthroscopy
        29881* Knee Arthroscopy
        29882* Knee Arthroscopy
        29884* Knee Arthroscopy
    40  47562* Laparoscopic cholecystectomy
        47564* Laparoscopic cholecystectomy
        19125* Needle localization breast biopsy
        62310* Pain management -epidural
        62311* Pain management -epidural
    45  64510* Pain management -epidural
        20550* Pain management -injection
        55700* Prostate biopsy
```

```
      30400* Rhinoplasty
      15828* Rhytidectomy
      23412* Shoulder Arthroplasty (open)
      23450* Shoulder Arthroplasty (open)
  5   23455* Shoulder Arthroplasty (open)
      29815* Shoulder Arthroscopy, dx or tx
      29819* Shoulder Arthroscopy, dx or tx
      29820* Shoulder Arthroscopy, dx or tx
      29821* Shoulder Arthroscopy, dx or tx
 10   29822* Shoulder Arthroscopy, dx or tx
      29823* Shoulder Arthroscopy, dx or tx
      29825* Shoulder Arthroscopy, dx or tx
      29826* Shoulder Arthroscopy, dx or tx


 15


      56340* Laparoscopic cholecystectomy
      56342* Laparoscopic cholecystectomy
      56300* GYN laparoscopy
 20   56302* GYN laparoscopy
      56304* GYN laparoscopy
      56351* D&C/Hysteroscopy
      62275* Pain management -epidural
      62278* Pain management -epidural
 25   62289* Pain management -epidural
      62298* Pain management -epidural
```

Sites.1st file

```
 30   ;"ALL" MUST BE FIRST

      ALL*    All Centers*
      aaa*    AA Center*                  daniel
      aab*    CenterA*                              helen
 35   aac*    CenterB*                                 debbie
      aad*    CenterC*                           jones
      aae*    CenterD*                           shannon
      aaf*    Z*                        jennifer


 40
```

Stage1.1st file

```
      ;Last Updated: 04/14/2000

      DOP*
 45   PAYOR*
      DISPOSITIO*
      RECTIME*
      SURGTIME*
```

71

```
INTTIME*
AGE*

     ;Anesthesia*Anesthesia
 5
     ;-----------------------------------------------
     ;Miscellaneous (PATINT2)
       ;INTTIME2*IIf(TimeDiff([START],[ENDTIME])<0,0,TimeDiff([START],[ENDTIME]))
     Disp3*IIf(DISPOSITIO="3",True,False)
10   Disp2*IIf(DISPOSITIO="2",True,False)

     ;-------------------------------------------------------------
     ;Miscellaneous (MEDREC)
     Anesthesia3*Left(Anesthesia,3)
15   PAYOR3*Left(PAYOR,3)
     PV*IIf(pv1="Y",True,False)
     PR*IIf(pr1="Y",True,False)
     Ind2Threshold*

20   ;-----------------------------------------------
     ;General Indicators (PATINT2)
     Nummer1_1*IIf(Pain_Complic_Nausea_1 OR Pain_Complic_Vomiting_1 OR Pain_Complic_InabilityToVoid_1 OR
     Pain_Complic_Bleeding_1 OR Pain_Complic_InstabVitalSigns_1 OR Pain_Complic_LevelOfConscChanges_1 OR
     Pain_Complic_RespirProblems_1,True,False)
25   Nummer6_1*IIf(Not(IIf(Postop_Pat_Int_Complic_Nausea_1 OR Postop_Pat_Int_Complic_Vomiting_1 OR
     Postop_Pat_Int_Complic_Fever_1 OR Postop_Pat_Int_Complic_ProblemUrine_1 OR
     Postop_Pat_Int_Complic_Bleeding_1 OR Postop_Pat_Int_Complic_SignsOfInf_1,True,False)) AND
     Not(IsNull(PI_IDN)),True,False)
     Nummer7_1*IIf((PATINT2.inspain="Y") And Not(Not(folm="Y") and Not(folcom="Y")) And (usem="Y" Or
30   inscom="Y") And (folm="Y" Or folcom="Y") And (Left(relief,5)="compl") And (phome="Y"),True,False)
     Denom7_1*IIf(phome="Y" and Not(Not(folm="Y") and Not(folcom="Y")),True,False)
     Nummer8_1*IIf((qregadm="Excellent" OR qregadm="N/A") And (qpreadm="Excellent" OR qpreadm="N/A") And
     (qrecov="Excellent" OR qrecov="N/A") AND (NOT (qregadm="N/A" AND qpreadm="N/A" AND
     qrecov="N/A")),True,False)
35   Nummer9_1*IIf(Left(prob,1)="Y" And Left(whocall,1)="Y" And Left(med,1)="Y" And
     Left(app,1)="Y",True,False)
     Nummer10_1*IIf(Left(inf,1)="Y" And Left(prob,1)="Y" And Left(whocall,1)="Y" And Left(med,1)="Y" And
     Left(app,1)="Y",True,False)

40   ;-----------------------------------------------------
     ;Pain and Complications (MEDREC)
     Pain_Complic_Pain_1*IIf(LEFT(PAIN1,1)="Y" OR LEFT(PAIN2,1)="Y" OR LEFT(PAIN3,1)="Y",True,False)
     Pain_Complic_Nausea_1*IIf(LEFT(NAUS1,1)="Y" OR LEFT(NAUS2,1)="Y" OR LEFT(NAUS3,1)="Y",True,False)
     Pain_Complic_Vomiting_1*IIf(LEFT(VOM1,1)="Y" OR LEFT(VOM2,1)="Y" OR LEFT(VOM3,1)="Y",True,False)
45   Pain_Complic_InabilityToVoid_1*IIf(LEFT(INVOID1,1)="Y" OR LEFT(INVOID2,1)="Y" OR
     LEFT(INVOID3,1)="Y",True,False)
     Pain_Complic_Bleeding_1*IIf(LEFT(MEDREC.BLEED1,1)="Y" OR LEFT(MEDREC.BLEED2,1)="Y" OR
     LEFT(MEDREC.BLEED3,1)="Y",True,False)
     Pain_Complic_InstabVitalSigns_1*IIf(LEFT(IVS1,1)="Y" OR LEFT(IVS2,1)="Y" OR
50   LEFT(IVS3,1)="Y",True,False)
     Pain_Complic_LevelOfConscChanges_1*IIf(LEFT(LOC1,1)="Y" OR LEFT(LOC2,1)="Y" OR
     LEFT(LOC3,1)="Y",True,False)
     Pain_Complic_RespirProblems_1*IIf(LEFT(RESP1,1)="Y" OR LEFT(RESP2,1)="Y" OR
     LEFT(RESP3,1)="Y",True,False)
55
     ;-------------------------------------------------------
     ;Pain Control Methods (MEDREC)
     Pain_Control_Meth_PrescrGivenOnDischarge_1*IIf(LEFT(PPG,1)="Y" ,True,False)
     Pain_Control_Meth_PainContrMethExplOnDischarge_1*IIf(LEFT(PCME,1)="Y" ,True,False)
60
     Pain_Control_Meth_PainVerb_1*IIf(LEFT(PV1,1)="Y",True,False)
     Pain_Control_Meth_MedOrdered_1*IIf(LEFT(MO1,1)="Y",True,False) AND Pain_Control_Meth_PainVerb_1
     Pain_Control_Meth_MedAdmin_1*IIf(LEFT(MA1,1)="Y",True,False) AND Pain_Control_Meth_PainVerb_1
     Pain_Control_Meth_MedAdminAndRefused_1*IIf(LEFT(MA1,1)="R",True,False) AND Pain_Control_Meth_PainVerb_1
65   Pain_Control_Meth_PainRelieved_1*IIf(LEFT(PR1,1)="Y",True,False) AND Pain_Control_Meth_PainVerb_1

     ;-----------------------------------------
     ;After Leaving the Surgery Center (PATINT2)
     After_Leave_Surgery_Problems_Might_Have_1*IIf(Left(Prob,1)="Y",True,False)
70   After_Leave_Surgery_Who_Call_1*IIf(Left(Whocall,1)="Y",True,False)
     After_Leave_Surgery_Meds_To_Use_1*IIf(Left(Med,1)="Y",True,False)
     After_Leave_Surgery_Had_Appointment_1*IIf(Left(App,1)="Y",True,False)
     After_Leave_Surgery_Had_All_Info_1*IIf(Left(Inf,1)="Y",True,False)

75   ;-----------------------------------------------
     ;Postoperative Complications (PATINT2)
     Postop_Pat_Int_Complic_Nausea_1*IIf(PATINT2.nausea3="Y" Or PATINT2.nausea4="Y" Or PATINT2.nausea5="Y"
     Or PATINT2.nausea6="Y" Or PATINT2.nausea7="Y",True,False)
     Postop_Pat_Int_Complic_Vomiting_1*IIf(PATINT2.vomit3="Y" Or PATINT2.vomit4="Y" Or PATINT2.vomit5="Y" Or
80   PATINT2.vomit6="Y" Or PATINT2.vomit7="Y",True,False)
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     Postop_Pat_Int_Complic_Fever_1*IIf(PATINT2.fever3="Y" Or PATINT2.fever4="Y" Or PATINT2.fever5="Y" Or
     PATINT2.fever6="Y" Or PATINT2.fever7="Y",True,False)
     Postop_Pat_Int_Complic_ProblemUrine_1*IIf(PATINT2.urine3="Y" Or PATINT2.urine4="Y" Or
     PATINT2.urine5="Y" Or PATINT2.urine6="Y" Or PATINT2.urine7="Y",True,False)
  5  Postop_Pat_Int_Complic_Bleeding_1*IIf(PATINT2.bleed3="Y" Or PATINT2.bleed4="Y" Or PATINT2.bleed5="Y" Or
     PATINT2.bleed6="Y" Or PATINT2.bleed7="Y",True,False)
     Postop_Pat_Int_Complic_SignsOfInf_1*IIf(PATINT2.infec3="Y" Or PATINT2.infec4="Y" Or PATINT2.infec5="Y"
     Or PATINT2.infec6="Y" Or PATINT2.infec7="Y",True,False)

 10  ;------------------------------------------------
     ;Postoperative Complications (PATINT2) -- Old Version
     ;Postop_Pat_Int_Complic_Nausea_1*IIf(Left(Nausea1,1)="Y",True,False)
     ;Postop_Pat_Int_Complic_Vomiting_1*IIf(Left(Vomit1,1)="Y",True,False)
     ;Postop_Pat_Int_Complic_Fever_1*IIf(Left(Fever1,1)="Y",True,False)
 15  ;Postop_Pat_Int_Complic_ProblemUrine_1*IIf(Left(Urine1,1)="Y",True,False)
     ;Postop_Pat_Int_Complic_Bleeding_1*IIf(Left(Patint2.Bleed1,1)="Y",True,False)
     ;Postop_Pat_Int_Complic_SignsOfInf_1*IIf(Left(Infec1,1)="Y",True,False)


 20  ;------------------------------------------------
     ;Pain Management at Home (PATINT2)
     Pain_Manag_Home_PostopPainAtHome_1*IIf(Left(Phome,1)="Y",True,False)
     Pain_Manag_Home_PostopInstrContrPain_1*IIf(Left(Phome,1)="Y" AND Left(Inspain,1)="Y",True,False)
     Pain_Manag_Home_ComplWithInstr_1*IIf(Left(Phome,1)="Y" AND (Left(Folm,1)="Y" OR Left(Folcom,1)="Y") And
     IsNull(Foloth),True,False)
 25
     ;------------------------------------------------
     ;Pain Relief at Home for Patients Who Had Pain (PATINT2)
     Pain_Relief_Home_Completely_1*IIf(Left(Phome,1)="Y" AND Left(Relief,3)="Com",True,False)
     Pain_Relief_Home_Greatly_1*IIf(Left(Phome,1)="Y" AND Left(Relief,3)="Gre",True,False)
 30  Pain_Relief_Home_Somewhat_1*IIf(Left(Phome,1)="Y" AND Left(Relief,3)="Som",True,False)
     Pain_Relief_Home_NotRelieved_1*IIf(Left(Phome,1)="Y" AND Left(Relief,3)="Not",True,False)


     ;------------------------------------------------
 35  ;Perceived Quality in Registr and Admission Process (PATINT2)
     Perceived_Quality_Reg_And_Admis_Excellent_1*IIf(Left(Qregadm,3)="Exc",True,False)
     Perceived_Quality_Reg_And_Admis_Good_1*IIf(Left(Qregadm,3)="Goo",True,False)
     Perceived_Quality_Reg_And_Admis_Fair_1*IIf(Left(Qregadm,3)="Fai",True,False)
     Perceived_Quality_Reg_And_Admis_Poor_1*IIf(Left(Qregadm,3)="Poo",True,False)
     Perceived_Quality_Reg_And_Admis_N-A_1*IIf(Left(Qregadm,3)="N/A",True,False)
 40
     ;------------------------------------------------
     ;Perceived Quality at Preadmission Testing (PATINT2)
     Perceived_Quality_Preadmis_Excellent_1*IIf(Left(Qpreadm,3)="Exc",True,False)
     Perceived_Quality_Preadmis_Good_1*IIf(Left(Qpreadm,3)="Goo",True,False)
 45  Perceived_Quality_Preadmis_Fair_1*IIf(Left(Qpreadm,3)="Fai",True,False)
     Perceived_Quality_Preadmis_Poor_1*IIf(Left(Qpreadm,3)="Poo",True,False)
     Perceived_Quality_Preadmis_N-A_1*IIf(Left(Qpreadm,3)="N/A",True,False)


 50  ;------------------------------------------------
     ;Perceived Quality in Recovery stage in the Center (PATINT2)
     Perceived_Quality_Rec_Stage_Excellent_1*IIf(Left(Qrecov,3)="Exc",True,False)
     Perceived_Quality_Rec_Stage_Good_1*IIf(Left(Qrecov,3)="Goo",True,False)
     Perceived_Quality_Rec_Stage_Fair_1*IIf(Left(Qrecov,3)="Fai",True,False)
     Perceived_Quality_Rec_Stage_Poor_1*IIf(Left(Qrecov,3)="Poo",True,False)
 55  Perceived_Quality_Rec_Stage_N-A_1*IIf(Left(Qrecov,3)="N/A",True,False)


     ;------------------------------------------------
     ;Age Distribution (MEDREC)
     Age_Distrib_0-14_1*IIf(AGE>0 AND AGE<15,True,False)
 60  Age_Distrib_15-24_1*IIf(AGE>=15 AND AGE<25,True,False)
     Age_Distrib_25-34_1*IIf(AGE>=25 AND AGE<35,True,False)
     Age_Distrib_35-44_1*IIf(AGE>=35 AND AGE<45,True,False)
     Age_Distrib_45-54_1*IIf(AGE>=45 AND AGE<55,True,False)
     Age_Distrib_55-64_1*IIf(AGE>=55 AND AGE<65,True,False)
 65  Age_Distrib_65-74_1*IIf(AGE>=65 AND AGE<75,True,False)
     Age_Distrib_75-84_1*IIf(AGE>=75 AND AGE<85,True,False)
     Age_Distrib_85+_1*IIf(AGE>=85 AND AGE<=120,True,False)
     Age_Distrib_Tot_1*IIf(AGE>0 AND AGE<=120,True,False)


 70  ;------------------------------------------------
     ;Recovery Time Distrubution (MEDREC)
     RECTIME-0-30_1*IIf(RECTIME>0 and RECTIME<30,True,False)
     RECTIME-30-60_1*IIf(RECTIME>=30 and RECTIME<60,True,False)
     RECTIME-60-90_1*IIf(RECTIME>=60 and RECTIME<90,True,False)
 75  RECTIME-90-120_1*IIf(RECTIME>=90 and RECTIME<120,True,False)
     RECTIME-120-150_1*IIf(RECTIME>=120 and RECTIME<150,True,False)
     RECTIME-150-180_1*IIf(RECTIME>=150 and RECTIME<180,True,False)
     RECTIME-180-210_1*IIf(RECTIME>=180 and RECTIME<210,True,False)
     RECTIME-210-240_1*IIf(RECTIME>=210 and RECTIME<240,True,False)
 80  RECTIME-240+_1*IIf(RECTIME>=240 ,True,False)
     RECTIME_TOT_1*IIf(RECTIME>0 ,True,False)
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      ;--------------------------------------------------------
      ;Surgery Time Distribution (MEDREC)
      SURGTIME-0-30_1*IIf(SURGTIME>0 and SURGTIME<30,True,False)
 5    SURGTIME-30-60_1*IIf(SURGTIME>=30 and SURGTIME<60,True,False)
      SURGTIME-60-90_1*IIf(SURGTIME>=60 and SURGTIME<90,True,False)
      SURGTIME-90-120_1*IIf(SURGTIME>=90 and SURGTIME<120,True,False)
      SURGTIME-120-150_1*IIf(SURGTIME>=120 and SURGTIME<150,True,False)
      SURGTIME-150-180_1*IIf(SURGTIME>=150 and SURGTIME<180,True,False)
10    SURGTIME-180-210_1*IIf(SURGTIME>=180 and SURGTIME<210,True,False)
      SURGTIME-210-240_1*IIf(SURGTIME>=210 and SURGTIME<240,True,False)
      SURGTIME-240+_1*IIf(SURGTIME>=240 ,True,False)
      SURGTIME_TOT_1*IIf(SURGTIME>0 ,True,False)

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Stage2.lst file

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      ;--------------------------------------------------------
      ;Header
      TotMR*          Long*        Count(Site)**
20    TotPI*          Long*        Count(PI_IDN)**


      ;--------------------------------------------------------
      ;General Indicators (MEDREC)
      Nummer1*        Long*        Count(IIf(Nummer1_1,True,Null))**
25    Nummer2*        Long*        Count(IIf(RECTIME>Ind2Threshold,True,Null))**
      Nummer3*        Long*        Count(IIf(Disp3,True,Null))**
      Nummer4*        Long*        Count(IIf(Disp2,True,Null))**
      Nummer5*        Long*        Count(IIf(PV And Not(PR),True,Null))**
      Denom5*         Long*        Count(IIf(PV,True,Null))**
30

      ;--------------------------------------------------------
      ;General Indicators (PATINT2)
      Nummer6*        Long*        Count(IIf(Nummer6_1,True,Null))**
      Nummer7*        Long*        Count(IIf(Nummer7_1,True,Null))**
35    Denom7*         Long*        Count(IIf(Denom7_1,True,Null))**
      Nummer8*        Long*        Count(IIf(Nummer8_1,True,Null))**
      Nummer9*        Long*        Count(IIf(Nummer9_1,True,Null))**
      Nummer10*       Long*        Count(IIf(Nummer10_1,True,Null))**


40    ;--------------------------------------------------------
      ;Complications by Payor (MEDREC)
      TotCare*        Long*        Count(IIf(PAYOR="Medicare",True,Null))**
      Care*           Long*        Count(IIf(PAYOR="Medicare" AND Nummer1_1,True,Null))**
      TotAid*         Long*        Count(IIf(PAYOR="Medicaid",True,Null))**
45    Aid*            Long*        Count(IIf(PAYOR="Medicaid" AND Nummer1_1,True,Null))**
      TotCom*         Long*        Count(IIf(Payor3="Com",True,Null))**
      Com*            Long*        Count(IIf(Payor3="Com" AND Nummer1_1,True,Null))**
      TotCap*         Long*        Count(IIf(Payor3="Cap",True,Null))**
      Cap*            Long*        Count(IIf(Payor3="Cap" AND Nummer1_1,True,Null))**
50    TotUni*         Long*        Count(IIf(Payor3="Uni",True,Null))**
      Uni*            Long*        Count(IIf(Payor3="Uni" AND Nummer1_1,True,Null))**
      TotWor*         Long*        Count(IIf(Payor3="Wor",True,Null))**
      Wor*            Long*        Count(IIf(Payor3="Wor" AND Nummer1_1,True,Null))**
      TotOth*         Long*        Count(IIf(Payor3="Oth",True,Null))**
55    Oth*            Long*        Count(IIf(Payor3="Oth" AND Nummer1_1,True,Null))**


      ;--------------------------------------------------------
      ;Complications by Anesthesia (MEDREC)
      TotEpi*         Long*        Count(IIf(Anesthesia3="Epi",True,Null))**
60    Epi*            Long*        Count(IIf(Anesthesia3="Epi" AND Nummer1_1,True,Null))**
      TotGen*         Long*        Count(IIf(Anesthesia3="Gen",True,Null))**
      Gen*            Long*        Count(IIf(Anesthesia3="Gen" AND Nummer1_1,True,Null))**
      TotSpi*         Long*        Count(IIf(Anesthesia3="Spi",True,Null))**
      Spi*            Long*        Count(IIf(Anesthesia3="Spi" AND Nummer1_1,True,Null))**
65    TotMAC*         Long*        Count(IIf(Anesthesia3="MAC",True,Null))**
      MAC*            Long*        Count(IIf(Anesthesia3="MAC" AND Nummer1_1,True,Null))**
      TotBlock*       Long*        Count(IIf(Anesthesia3="Blo",True,Null))**
      Block*          Long*        Count(IIf(Anesthesia3="Blo" AND Nummer1_1,True,Null))**
      TotTopical*     Long*        Count(IIf(Anesthesia3="Top",True,Null))**
70    Topical*        Long*        Count(IIf(Anesthesia3="Top" AND Nummer1_1,True,Null))**
      TotLoc*         Long*        Count(IIf(Anesthesia3="Loc",True,Null))**
      Loc*            Long*        Count(IIf(Anesthesia3="Loc" AND Nummer1_1,True,Null))**
      TotIVC*         Long*        Count(IIf(Anesthesia3="IV-",True,Null))**
      IVC*            Long*        Count(IIf(Anesthesia3="IV-" AND Nummer1_1,True,Null))**
75    TotOther*       Long*        Count(IIf(Anesthesia3="Oth",True,Null))**
      Other*          Long*        Count(IIf(Anesthesia3="Oth" AND Nummer1_1,True,Null))**
      TotNone*        Long*        Count(IIf(Anesthesia3="Non",True,Null))**
      None*           Long*        Count(IIf(Anesthesia3="Non" AND Nummer1_1,True,Null))**
```

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  5     ;---------------------------------------------------------
        ;Pain Disposition (MEDREC)
        Patient_Dispos_RetainedMore3Hrs*     Long*        Count(IIf(DISPOSITIO="1",True,Null))**
        Patient_Dispos_Hospital*             Long*        Count(IIf(DISPOSITIO="2",True,Null))**
        Patient_Dispos_Reoperated*           Long*        Count(IIf(DISPOSITIO="3",True,Null))**
        Patient_Dispos_Normal*               Long*        Count(IIf(DISPOSITIO="4",True,Null))**

 10     ;---------------------------------------------------------
        ;Pain and Complications (MEDREC)
        Pain_Complic_NoPain-NoComplic*           Long*        Count(IIf(Pain_Complic_Pain_1 OR Pain_Complic_Nausea_1
        OR Pain_Complic_Vomiting_1 OR Pain_Complic_InabilityToVoid_1 OR Pain_Complic_Bleeding_1 OR
        Pain_Complic_InstabVitalSigns_1 OR Pain_Complic_LevelOfConscChanges_1 OR
 15     Pain_Complic_RespirProblems_1,Null,True))**
        Pain_Complic_Pain*                       Long*        Count(IIf(Pain_Complic_Pain_1,True,Null))**
        Pain_Complic_Nausea*                     Long*        Count(IIf(Pain_Complic_Nausea_1,True,Null))**
        Pain_Complic_Vomiting*                   Long*        Count(IIf(Pain_Complic_Vomiting_1,True,Null))**
        Pain_Complic_InabilityToVoid*            Long*        Count(IIf(Pain_Complic_InabilityToVoid_1,True,Null))**
 20     Pain_Complic_Bleeding*                   Long*        Count(IIf(Pain_Complic_Bleeding_1,True,Null))**
        Pain_Complic_InstabVitalSigns*           Long*        Count(IIf(Pain_Complic_InstabVitalSigns_1,True,Null))**
        Pain_Complic_LevelOfConscChanges*        Long*
        Count(IIf(Pain_Complic_LevelOfConscChanges_1,True,Null))**
        Pain_Complic_RespirProblems*             Long*        Count(IIf(Pain_Complic_RespirProblems_1,True,Null))**
 25     ;---------------------------------------------------------
        ;Pain Control Methods (MEDREC)
        Pain_Control_Meth_PainVerb*                   Long*
        Count(IIf(Pain_Control_Meth_PainVerb_1,True,Null))**
 30     Pain_Control_Meth_MedOrdered*                 Long*
        Count(IIf(Pain_Control_Meth_MedOrdered_1,True,Null))**
        Pain_Control_Meth_MedAdmin*                   Long*
        Count(IIf(Pain_Control_Meth_MedAdmin_1,True,Null))**
        Pain_Control_Meth_MedAdminAndRefused*         Long*
 35     Count(IIf(Pain_Control_Meth_MedAdminAndRefused_1,True,Null))**
        Pain_Control_Meth_PainRelieved*               Long*
        Count(IIf(Pain_Control_Meth_PainRelieved_1,True,Null))**
        Pain_Control_Meth_PrescrGivenOnDischarge*     Long*
        Count(IIf(Pain_Control_Meth_PrescrGivenOnDischarge_1,True,Null))**
 40     Pain_Control_Meth_PainContrMethExplOnDischarge* Long*
        Count(IIf(Pain_Control_Meth_PainContrMethExplOnDischarge_1,True,Null))**

        ;---------------------------------------------------------
        ;After Leaving the Surgery Center (PATINT2)
 45     After_Leave_Surgery_Problems_Might_Have*      Long*
        Count(IIf(After_Leave_Surgery_Problems_Might_Have_1,True,Null))**
        After_Leave_Surgery_Who_Call*                 Long*
        Count(IIf(After_Leave_Surgery_Who_Call_1,True,Null))**
        After_Leave_Surgery_Meds_To_Use*              Long*
 50     Count(IIf(After_Leave_Surgery_Meds_To_Use_1,True,Null))**
        After_Leave_Surgery_Had_Appointment*          Long*
        Count(IIf(After_Leave_Surgery_Had_Appointment_1,True,Null))**
        After_Leave_Surgery_Had_All_Info*             Long*
        Count(IIf(After_Leave_Surgery_Had_All_Info_1,True,Null))**
 55     ;---------------------------------------------------------
        ;Postoperative Complications (PATINT2)
        Postop_Pat_Int_Complic_AnyProblem*                Long*        Count(IIf(Postop_Pat_Int_Complic_Nausea_1 OR
        Postop_Pat_Int_Complic_Vomiting_1 OR Postop_Pat_Int_Complic_Fever_1 OR Postop_Pat_Int_Complic_ProblemUrine_1
 60     OR Postop_Pat_Int_Complic_Bleeding_1 OR Postop_Pat_Int_Complic_SignsOfInf_1,True,Null))**

        Postop_Pat_Int_Complic_Nausea*                    Long*
        Count(IIf(Postop_Pat_Int_Complic_Nausea_1,True,Null))**
        Postop_Pat_Int_Complic_Vomiting*                  Long*
 65     Count(IIf(Postop_Pat_Int_Complic_Vomiting_1,True,Null))**
        Postop_Pat_Int_Complic_Fever*                     Long*
        Count(IIf(Postop_Pat_Int_Complic_Fever_1,True,Null))**
        Postop_Pat_Int_Complic_ProblemUrine*              Long*
        Count(IIf(Postop_Pat_Int_Complic_ProblemUrine_1,True,Null))**
 70     Postop_Pat_Int_Complic_Bleeding*                  Long*
        Count(IIf(Postop_Pat_Int_Complic_Bleeding_1,True,Null))**
        Postop_Pat_Int_Complic_SignsOfInf*                Long*
        Count(IIf(Postop_Pat_Int_Complic_SignsOfInf_1,True,Null))**

 75     ;---------------------------------------------------------
        ;Pain Management at Home (PATINT2)
        Pain_Manag_Home_PostopPainAtHome*             Long*
        Count(IIf(Pain_Manag_Home_PostopPainAtHome_1,True,Null))**
        Pain_Manag_Home_PostopInstrContrPain*         Long*
 80     Count(IIf(Pain_Manag_Home_PostopInstrContrPain_1,True,Null))**
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      · Pain_Manag_Home_ComplWithInstr*              Long*
        Count(IIf(Pain_Manag_Home_ComplWithInstr_1,True,Null))**


  5     ;-----------------------------------------------
        ;Pain Relief at Home for Patients Who Had Pain (PATINT2)
        Pain_Relief_Home_Completely*            Long*          Count(IIf(Pain_Relief_Home_Completely_1,True,Null))**
        Pain_Relief_Home_Greatly*               Long*          Count(IIf(Pain_Relief_Home_Greatly_1,True,Null))**
        Pain_Relief_Home_Somewhat*              Long*          Count(IIf(Pain_Relief_Home_Somewhat_1,True,Null))**
        Pain_Relief_Home_NotRelieved*           Long*          Count(IIf(Pain_Relief_Home_NotRelieved_1,True,Null))**
 10
        ;-----------------------------------------------
        ;Perceived Quality in Registr and Admission Process (PATINT2)
        Perceived_Quality_Reg_And_Admis_Excellent*          Long*
        Count(IIf(Perceived_Quality_Reg_And_Admis_Excellent_1,True,Null))**
 15     Perceived_Quality_Reg_And_Admis_Good*               Long*
        Count(IIf(Perceived_Quality_Reg_And_Admis_Good_1,True,Null))**
        Perceived_Quality_Reg_And_Admis_Fair*               Long*
        Count(IIf(Perceived_Quality_Reg_And_Admis_Fair_1,True,Null))**
        Perceived_Quality_Reg_And_Admis_Poor*               Long*
 20     Count(IIf(Perceived_Quality_Reg_And_Admis_Poor_1,True,Null))**
        Perceived_Quality_Reg_And_Admis_N-A*                Long*          Count(IIf([Perceived_Quality_Reg_And_Admis_N-
        A_1],True,Null))**


 25     ;-----------------------------------------------
        ;Perceived Quality at Preadmission Testing (PATINT2)
        Perceived_Quality_Preadmis_Excellent*       , Long*
        Count(IIf(Perceived_Quality_Preadmis_Excellent_1,True,Null))**
        Perceived_Quality_Preadmis_Good*            Long*
 30     Count(IIf(Perceived_Quality_Preadmis_Good_1,True,Null))**
        Perceived_Quality_Preadmis_Fair*            Long*
        Count(IIf(Perceived_Quality_Preadmis_Fair_1,True,Null))**
        Perceived_Quality_Preadmis_Poor*            Long*
        Count(IIf(Perceived_Quality_Preadmis_Poor_1,True,Null))**
        Perceived_Quality_Preadmis_N-A*             Long*          Count(IIf([Perceived_Quality_Preadmis_N-
 35     A_1],True,Null))**


        ;-----------------------------------------------
        ;Perceived Quality in Recovery stage in the Center (PATINT2)
        Perceived_Quality_Rec_Stage_Excellent*      Long*
 40     Count(IIf(Perceived_Quality_Rec_Stage_Excellent_1,True,Null))**
        Perceived_Quality_Rec_Stage_Good*           Long*
        Count(IIf(Perceived_Quality_Rec_Stage_Good_1,True,Null))**
        Perceived_Quality_Rec_Stage_Fair*           Long*
        Count(IIf(Perceived_Quality_Rec_Stage_Fair_1,True,Null))**
 45     Perceived_Quality_Rec_Stage_Poor*           Long*
        Count(IIf(Perceived_Quality_Rec_Stage_Poor_1,True,Null))**
        Perceived_Quality_Rec_Stage_N-A*            Long*          Count(IIf([Perceived_Quality_Rec_Stage_N-
        A_1],True,Null))**


 50     ;-----------------------------------------------.
        ;Age distribution (MEDREC)
        Age_Distrib_Avg*            Single*        Avg(IIf(AGE>0 AND AGE<120,AGE,Null))*       Age_Distrib_Tot*
        Age_Distrib_0-14*           Long*          Count(IIf([Age_Distrib_0-14_1],True,Null))**
        Age_Distrib_15-24*          Long*          Count(IIf([Age_Distrib_15-24_1],True,Null))**
 55     Age_Distrib_25-34*          Long*          Count(IIf([Age_Distrib_25-34_1],True,Null))**
        Age_Distrib_35-44*          Long*          Count(IIf([Age_Distrib_35-44_1],True,Null))**
        Age_Distrib_45-54*          Long*          Count(IIf([Age_Distrib_45-54_1],True,Null))**
        Age_Distrib_55-64*          Long*          Count(IIf([Age_Distrib_55-64_1],True,Null))**
        Age_Distrib_65-74*          Long*          Count(IIf([Age_Distrib_65-74_1],True,Null))**
 60     Age_Distrib_75-84*          Long*          Count(IIf([Age_Distrib_75-84_1],True,Null))**
        Age_Distrib_85+*            Long*          Count(IIf([Age_Distrib_85+_1],True,Null))**
        Age_Distrib_Tot*            Long*          Count(IIf([Age_Distrib_Tot_1],True,Null))**


 65     ;-----------------------------------------------
        ;Recovery Time Distrubution (MEDREC)
        Rectime_Avg*        Single*        Avg(RECTIME)*      .               RECTIME_TOT*
        RECTIME-0-30*       Long*          Count(IIf([RECTIME-0-30_1],True,Null))**
        RECTIME-30-60*      Long*          Count(IIf([RECTIME-30-60_1],True,Null))**
        RECTIME-60-90*      Long*          Count(IIf([RECTIME-60-90_1],True,Null))**
 70     RECTIME-90-120*     Long*          Count(IIf([RECTIME-90-120_1],True,Null))**
        RECTIME-120-150*    Long*          Count(IIf([RECTIME-120-150_1],True,Null))**
        RECTIME-150-180*    Long*          Count(IIf([RECTIME-150-180_1],True,Null))**
        RECTIME-180-210*    Long*          Count(IIf([RECTIME-180-210_1],True,Null))**
        RECTIME-210-240*    Long*          Count(IIf([RECTIME-210-240_1],True,Null))**
 75     RECTIME-240+*       Long*          Count(IIf([RECTIME-240+_1],True,Null))**
        RECTIME_TOT*        Long*          Count(IIf([RECTIME_TOT_1],True,Null))**


        ;-----------------------------------------------
        ;Surgery Time Distribution (MEDREC)
 80     Surgtime_Avg*       Single*        Avg(SURGTIME)*                     SURGTIME_TOT*
        SURGTIME-0-30*      Long*          Count(IIf([SURGTIME-0-30_1],True,Null))**
```

```
SURGTIME-30-60*          Long*      Count(IIf([SURGTIME-30-60_1],True,Null))**
SURGTIME-60-90*          Long*      Count(IIf([SURGTIME-60-90_1],True,Null))**
SURGTIME-90-120*         Long*      Count(IIf([SURGTIME-90-120_1],True,Null))**
SURGTIME-120-150*        Long*      Count(IIf([SURGTIME-120-150_1],True,Null))**
SURGTIME-150-180*        Long*      Count(IIf([SURGTIME-150-180_1],True,Null))**
SURGTIME-180-210*        Long*      Count(IIf([SURGTIME-180-210_1],True,Null))**
SURGTIME-210-240*        Long*      Count(IIf([SURGTIME-210-240_1],True,Null))**
SURGTIME-240+*           Long*      Count(IIf([SURGTIME-240+_1],True,Null))**
SURGTIME_TOT*            Long*      Count(IIf([SURGTIME_TOT_1],True,Null))**

;---------------------------------------------------
;Miscellaneous (PATINT2)
IntTime_Avg*             Single*    Avg(IIf(INTTIME>=1 AND INTTIME<=20,INTTIME,Null))*      TotPI*
```

Corporate_Members.lst file

```
;Format:
;
;---Group's Name*Group's Username* Group's UserCode*Allow
separate members to access their reports (Yes|No)
;center1
;center2


---ASC Group*pinewood*zaa*no
aba
abh
acd
acc
abi
abj
abg
abk
```

new-soix.ini file

```
;This file includes paths to Program folder, INI folder and
Log folder.
;Edit it and copy to %windir% directory
;Caution: Do not put "\" at the end of folder names

;----------Shared parameters
INIPath
=c:\SOIX\Soix_Report_System\INI
LogPath
=c:\SOIX\Soix_Report_System\Log


OMS2ArchiveDirectory
=c:\SOIX\Soix_Report_System\DATA\OMS2_Archive
```

77

```
     OMS2BackupDirectory
     =c:\SOIX\Soix_Report_System\DATA\OMS2_Backup

     MDBFile
  5  =c:\SOIX\Soix_Report_System\DATA\SOIX.MDB
     LSTPath
     =c:\SOIX\Soix_Report_System\lst
     TemplateDirectory
     =c:\SOIX\Soix_Report_System\TEMPLATE
 10  UploadDirectory
     =C:\SOIX\WebSites\SOIX\upload
     InternetDirectory
     =C:\SOIX\WebSites\SOIX\Centers
     NewReportsInternetDirectory      =C:\SOIX\WebSites\SOIX\NEW
 15
     ;----------for paper reports
     SavePathForPaperReport
     =c:\SOIX\WebSites\SOIX\Paper_Reports
     ;Target = Web | Folder
 20  Target                           =Folder


     ;----------New sites preparation
     NTSecDirectory                   =c:\Admin_Stuff\NTSec
 25  ApacheUsersFile ..               =C:\SOIX\WebSites\soix_users
     ApacheGroupsFile
     =C:\SOIX\WebSites\soix_groups
     NewCenterTemplateFolder
     =c:\SOIX\Soix_Report_System\Template\NewCenterTemplateFolder
 30  PrepareUploadStuff            =Yes
     PrepareDownloadStuff          =Yes
     PrepareHTMLFiles              =Yes


 35
```

EXAMPLE 2

Exemplary indicators for benchmarking ambulatory

5   surgical procedures in one exemplary embodiment of the

invention include the following:

INDICATOR 1

General Criteria: Patients experiencing complications of

surgery during the perioperative period.

10   Indicator Logic And Calculation Concepts

Definition

The percent of all patients experiencing one or more of the

following complications during the intraoperative or

postoperative period while in the center:

15   Nausea

Vomiting

Instability of vital signs

Respiratory problems

Level of consciousness changes

20   Hemorrhage/bleeding

Inability to void requiring catheterization (excludes

intraoperative catheterization)

This indicator may be reported by the payor, the procedure,

and the anesthesia method

25   Type of Indicator

79

This is a rate-based indicator of operative complications

addressing a process of care with an optimal value of zero.

This indicator is stated in terms of a negative outcome;

therefore, higher rates should be viewed as opportunities

5 for further review and improvement. Lower rates are

generally considered better outcomes.

Rationale

Development of operative and postoperative complications may

or may not suggest a quality problem. Complications add

10 additional cost to the treatment of patients and/or increase

patient risk, length of stay, and recovery time.

Calculation Concepts

Numerator = Total Number of Patients Experiencing

Complications

15 Denominator = Total Number of Ambulatory Surgical Patients

Indicator Rate = (Numerator / Denominator) * 100

Data Source

Medical Record Abstract Form:

A response under the column for intra or post-operative

20 PROBLEMS for any of the following: nausea, vomiting,

inability to void, hemorrhage/bleeding, instability of vital

signs, respiratory problems, or LOC changes, will be counted

as meeting criteria 1, Patients experiencing complications

of surgery during the perioperative period.

This indicator is stated in terms of a negative outcome;

therefore, higher rates should be viewed as opportunities

for further review and improvement. Lower rates are

generally considered better outcomes.

5   Rationale

An additional surgical procedure during the current surgical

period may or may not indicate a quality problem. Unplanned

returns to surgery subject patients to the additional risks

inherent in surgical procedures and the inconvenience or

10   unexpected hardships associated with extended length of stay

or prolonged recovery periods. Unplanned returns to surgery

also add significantly to the cost of treatment.

Calculation Concepts

Numerator = Total Number of Patients Returned to Surgery

15   Denominator = Total Number of Ambulatory Surgical Patients

Indicator Rate = (Numerator / Denominator) * 100

Data Source

Medical Record Abstract Form; patient disposition

INDICATOR 4

20   Patients admitted to the hospital following surgery

Indicator Logic And Calculation Concepts

Definition

Percent of all patients who were admitted to the hospital as

inpatients during the intraoperative or postoperative

period.

Type of Indicator

5   This is a rate-based indicator of total admissions following

surgery within the postoperative period addressing a process

and outcome of care with an optimal value of zero.

This indicator is stated in terms of a negative outcome;

therefore, higher rates should be viewed as opportunities

10   for further review and improvement. Lower rates are

generally considered better outcomes.

Rationale

Admission to the hospital following ambulatory surgery may

or may not indicate a quality problem. Although all patients

15   included in this study were registered and scheduled as

ambulatory surgery patients, admissions following surgery

may have been anticipated by the physician in advance (e.g.,

admissions due to the possibility of additional procedures

being performed, the condition of the patient, the time for

20   which the procedure was scheduled, etc.). However, unplanned

admission subjects a patient to inconvenience or unexpected

hardships associated with extended length of stay. Unplanned

admissions also add significantly to the cost of treatment.

Calculation Concepts

Definition

Percent of all patients interviewed (post-op) who reported

none of the following problems:

Nausea

5   Vomiting

Fever

Difficulty urinating

Bleeding from the site of the procedure

Excessive redness, swelling, or other sign of infection

10   AND/OR

If one of the above problems was reported, none of the

following actions were needed to deal with the problem(s)

they experienced:

Visited the physician

15   Were admitted to the hospital

Received a new or changed prescription

Underwent further surgery

Went to the Emergency Room

Received care from home health care worker

20   Type of indicator

This is a rate-based indicator for patients reporting no

significant problems during the postoperative period which

required follow-up care with an optimal value of one.

87

This indicator is stated in terms of a positive outcome; therefore, lower rates should be viewed as opportunities for further review and improvement. Higher rates are generally considered better outcomes.

5   Rationale

Problems experienced by the patients after discharge related to the surgical procedure may or may not indicate a quality problem. Unexpected problems subject patients to additional risks, inconvenience, or the unexpected hardships associated

10   with prolonged recovery periods. Unexpected problems also add to the cost of treatment.

Calculation Concepts

Numerator =   Total Number of Patients Reporting No Problems
                   Requiring Action After Discharge.

Denominator =   Total Number of Ambulatory Surgical Patients Who
                   Participated in the Telephone Interview

Indicator Rate =   (Numerator / Denominator) * 100

Data Source

15   Patient Telephone Interview Form:

In order to be counted as meeting this criterion, a "no" response must be present indicating the patient experienced no nausea, vomiting, fever, etc. after leaving the center AND no boxes checked to indicate medical intervention (i.e.

called doctor, new prescription, etc.). A "yes" response to

any of the post-discharge problems WITH medical intervention

will *not* be counted as meeting this criterion.

INDICATOR 7

5   Patients expressing pain after discharge who had relief of

pain after utilizing pain control methods as instructed.

Indicator Logic And Calculation Concepts

Definition

Percent of patients interviewed who reported that they were

10   bothered by pain (related to the surgery) after discharge

who:

        Reported having instructions for using medicines or for

        using other comfort measures to control pain

        AND

15   Reported that they followed the instructions for using

        medicines and/or other comfort measures

        AND

        Reported that the methods that they were instructed to

        use completely relieved their pain.

20   Type of Indicator

This is a rate-based indicator of total patients who

expressed pain after discharge who were relieved of pain

using methods prescribed addressing a process and outcome of

care with an optimal value of 100%.

This indicator is stated in terms of a positive outcome; therefore, lower rates should be viewed as opportunities for further review and improvement. Higher rates are generally considered better outcomes.

5   Rationale

Unrelieved post-discharge pain may or may not indicate a quality problem. Such pain, if unrelieved, subjects patients to discomfort or other unexpected hardships associated with pain. Severe or unrelieved pain can result in visits to the
10 physician, ER visits, or prolonged recovery periods, and may add to the dissatisfaction of patients with their treatment.

Calculation Concepts

Numerator =	Total Number of Patients Completely Relieved of Pain Using Prescribed Methods
Denominator =	Total Number of Ambulatory Surgical Patients Reporting Post-Discharge Pain
Indicator Rate =	(Numerator / Denominator) * 100

15 Data Source

Patient Telephone Interview Form:

Question #3:   A response of "yes" must be present in all subcategories a - d., AND

90

Question #4 <u>must</u> indicate a score of 1 - 5 for "completely

relieved." Scores of 6 - 7 = "greatly relieved; " 8 - 9 =

"somewhat relieved;" and 10 = "not relieved." Scores of 6 -

10 are <u>not</u> considered as meeting this criterion.

5   INDICATOR 8

Patients satisfied with pre-operative, intraoperative, and

postoperative care.

Indicator Logic And Calculation Concepts

Definition

10   Percent of patients interviewed who stated that the quality

of care that they received during:

    The registration and admission process

    AND

    During the pre-admission testing

15   AND

    During the recovery period in the hospital was

    excellent.

Type of Indicator

This is a rate-based indicator of total patients rating care

20   as excellent addressing an outcome of care with an optimal

value of 100%.

This indicator is stated in terms of a positive outcome;

therefore, lower rates should be viewed as opportunities for

and/or "good" are not considered as meeting this criterion.

Responses of "N/A" are ignored and are not counted as either

meeting or not meeting the criteria. However, if all three

responses are "N/A" the case is considered as NOT meeting

5   the criterion of Indicator 8.

INDICATOR 9.

Patients who received and understood discharge instructions.

Indicator Logic And Calculation Concepts

Definition

10   Percent of patients interviewed who stated that after

leaving the hospital they knew:

What problems they might have after surgery

AND

Who to call if they had a problem

15   AND

What medicines or other methods to use to control pain

AND

When to see their doctor or when to schedule an

appointment.

20   Type of Indicator

This is a rate-based indicator of total patients who

received and understood defined aspects of the discharge

instructions primarily addressing an outcome of care with an

optimal value of 100%.

Rationale

Patients who do not receive or do not understand their

discharge instructions may or may not indicate a quality

problem at the hospital level. However, understanding of

5   instructions facilitates a smoother recovery and reduces the

inconvenience or unexpected hardships associated with

inadequate discharge information. Compliance with discharge

plans can reduce patient recovery time.

Calculation Concepts

Numerator =   Total Number of Patients Who
                                     Received and Understood Their
                                     Discharge Instructions

Denominator =   Total Number of Ambulatory
                                     Surgical Patients Who
                                     Participated in the Telephone
                                     Interview

Indicator Rate =   (Numerator / Denominator) *
                                     100

10

Data Source

Patient Telephone Interview Form:

A response of "yes" must be present for each of the first

four questions asked under question #1 in order to be

15   considered as meeting this criterion.   Responses of

"somewhat" are not considered as meeting the criteria.

INDICATOR 10

Patients adequately prepared for self-care at home after discharge.

Indicator Logic And Calculation Concepts

5   Definition

Percent of patients interviewed who stated that after they were home they felt that they had all of the information that they needed to care for themselves

AND

10   that after leaving the hospital they knew

What problems they might have after surgery

AND

Who to call if they had a problem

AND

15   What medicines or other methods to use to control pain

AND

When to see their doctor or when to schedule an appointment.

Type of Indicator

20   This is a rate-based indicator of total patients prepared for care at home after discharge primarily addressing an outcome of care with an optimal value of 100%.

This indicator is stated in terms of a positive outcome; therefore, lower rates should be viewed as opportunities for

further review and improvement. Higher rates are generally

considered better outcomes.

Rationale

Patients unprepared to care for themselves after discharge

5   may or may not indicate a quality problem. Understanding of

self-care instructions facilitates a smoother recovery and

reduces the inconvenience or unexpected hardships associated

with inadequate discharge information. Compliance with self-

care plans can reduce patient recovery time. Lack of

10   preparation for selfcare adds to the cost of care as

patients tend to seek care from physicians or hospitals.

Calculation Concepts

Numerator =   . .   Total Number of Patients
                                  Prepared for Self-Care after
                                  Discharge

Denominator =   Total Number of Ambulatory
                                  Surgical Patients Who
                                  Participated in the Telephone
                                  Interview

Indicator Rate =   (Numerator / Denominator)*100

Data Source

15   Patient Telephone Interview Form:

A response of "yes" must be present to the fifth question

asked under question #1, AND all of the elements for

criterion 9 (i.e. "yes" response to the first four

96

questions) must also be satisfied in order to be considered as meeting criterion 10.

These indicators are exemplary and many can be modified to adjust to changing user needs, new developments in the field

5   and regulatory requirements for example.

For the example given, the first five indicators are displayed as "negative" outcomes (optimal outcome is 0 percent); the last five indicators are displayed as "positive" outcomes with an optimal value of 100 percent.

10   The present invention is not to be limited in scope by the specific embodiments described herein. Indeed, various modifications of the present invention, in addition to those described herein, will be apparent to those of ordinary skill in the art from the foregoing description and

15   accompanying drawings. Thus, such modifications are intended to fall within the scope of the following appended claims. Further, although the present invention has been described herein in the context of a particular implementation in a particular environment for a particular

20   purpose, those of ordinary skill in the art will recognize that its usefulness is not limited thereto and that the present invention can be beneficially implemented in any number of environments for any number of purposes. Accordingly, the claims set forth below should be construed

in view of the full breath and spirit of the present

invention as disclosed herein.